United States Department of Agriculture

NRCS

Natural Resources Conservation Service

in cooperation with Ute Mountain Ute Tribe; United States Department of Interior, Bureau of Indian Affairs; the Colorado Agricultural Experiment Station; and the New Mexico Agricultural Experiment Station

Soil Survey of Ute Mountain Area, Colorado and New Mexico

How To Use This Soil Survey

General Soil Map

The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

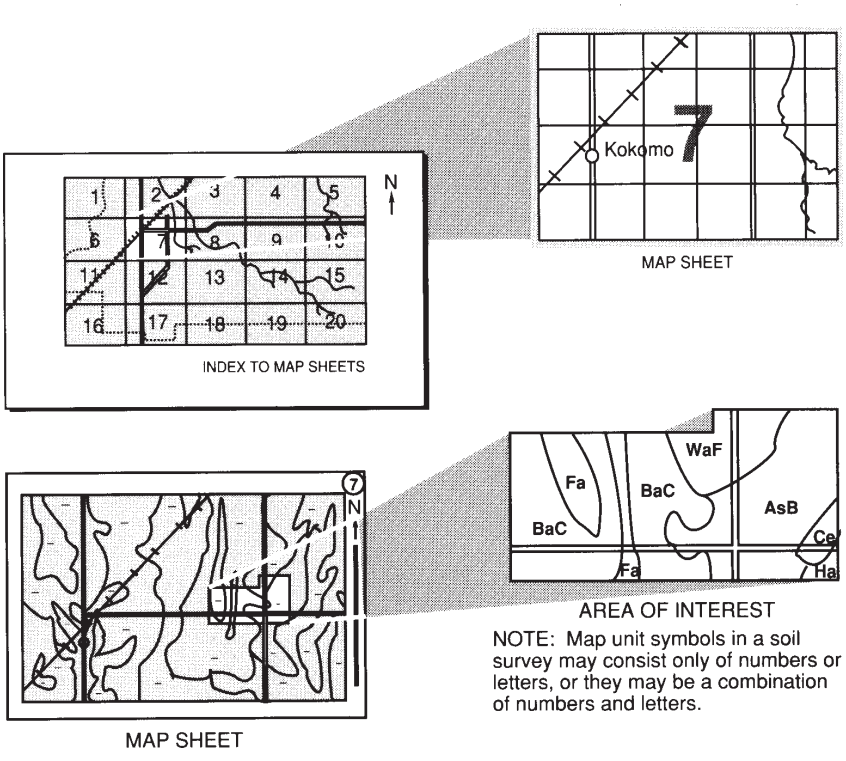
Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 2003. Soil names and descriptions were approved in 2005. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2005. This survey was made cooperatively by the Natural Resources Conservation Service; Ute Mountain Ute Tribe; Bureau of Indian Affairs; and the Colorado and New Mexico Agricultural Experiment Stations. It is part of the technical assistance furnished to the Ute Mountain Ute Tribe, Dolores Soil Conservation District, Colorado, and the San Juan Soil and Water Conservation District, New Mexico.

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Cover: Chimney Rock stands prominently in the center of the photo, near the western edge of the Mesa Verde Plateau. Sleeping Ute Mountain is in the background.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

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Foreword

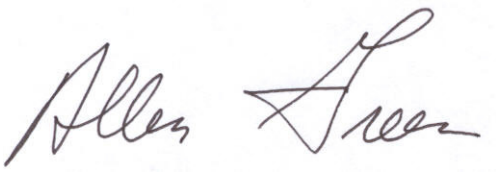
This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.



Allen Green
Colorado State Conservationist
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Soil Survey of
Ute Mountain Area, Colorado and New Mexico

By Douglas K. Ramsey, Natural Resources Conservation Service

Fieldwork by Douglas K. Ramsey, Jonathan Hooper, Cathy Scott, and James Harrigan, Natural Resources Conservation Service

Vegetative work by Stephen Myers, Natural Resources Conservation Service

This survey was made cooperatively by the Natural Resources Conservation Service; Ute Mountain Ute Tribe; Bureau of Indian Affairs; and the Colorado and New Mexico Agricultural Experiment Stations. It is part of the technical assistance furnished to the Ute Mountain Ute Tribe, Dolores Soil Conservation District, Colorado, and the San Juan Soil and Water Conservation District, New Mexico.

Introduction

This soil survey updates parts of the surveys of La Plata County Area, Colorado, completed in 1982 (Pannell, 1988), and San Juan County, New Mexico, Eastern Part, completed in 1977 (Keetch, 1980).

General Nature of the Area

The Ute Mountain Soil Survey Area is located in the very southwestern part of Colorado (fig. 1). It covers a total of 567,004 acres and includes the southern portion of Montezuma County, Colorado (444,995 acres), the southwestern portion of La Plata County, Colorado (17,105 acres), and a portion of north-central San Juan County, New Mexico (104,904 acres). Towaoc, the only town in the survey area, is located in the north-central part of the survey area, about 12 miles south of Cortez, Colorado, and has a population of about 1,100.

The survey area has a wide range of vegetation types, climates, and elevations. The southwestern zone is dry and sparsely vegetated with desert shrubs and grasses. This zone ranges from about 4,800 feet to 5,700 feet in elevation and receives from 7 to 10 inches of precipitation a year. Both precipitation and elevation gradually increase from the southwest to the northeast. The next zone is dominated by sagebrush, pinyon pine, and Utah juniper. This zone ranges from about 5,700 to 7,400 feet and receives about 10 to 15 inches of precipitation per year. The highest zone, located on the upper elevations of the Sleeping Ute Mountains, consists of Gambel's oak, grasses, and scattered areas of Ponderosa pine and Douglas fir. This zone ranges from about 7,400 feet to near 10,000 and receives about 15 to 20 inches of precipitation each year. The major economic activities are agriculture and tourism. Livestock grazing and the Ute Mountain Farm and Ranch Enterprises are the major agricultural enterprises. The Ute Mountain Tribal Park, an archeological preserve of ancient Indian ruins, abuts Mesa Verde National Park on the south; and tourists can take guided day trips to the sites. The Ute Mountain Casino and Hotel provides a substantial economic boost to the area. Oil and gas are produced in the Barker Dome region, in the far eastern portion of the survey area.

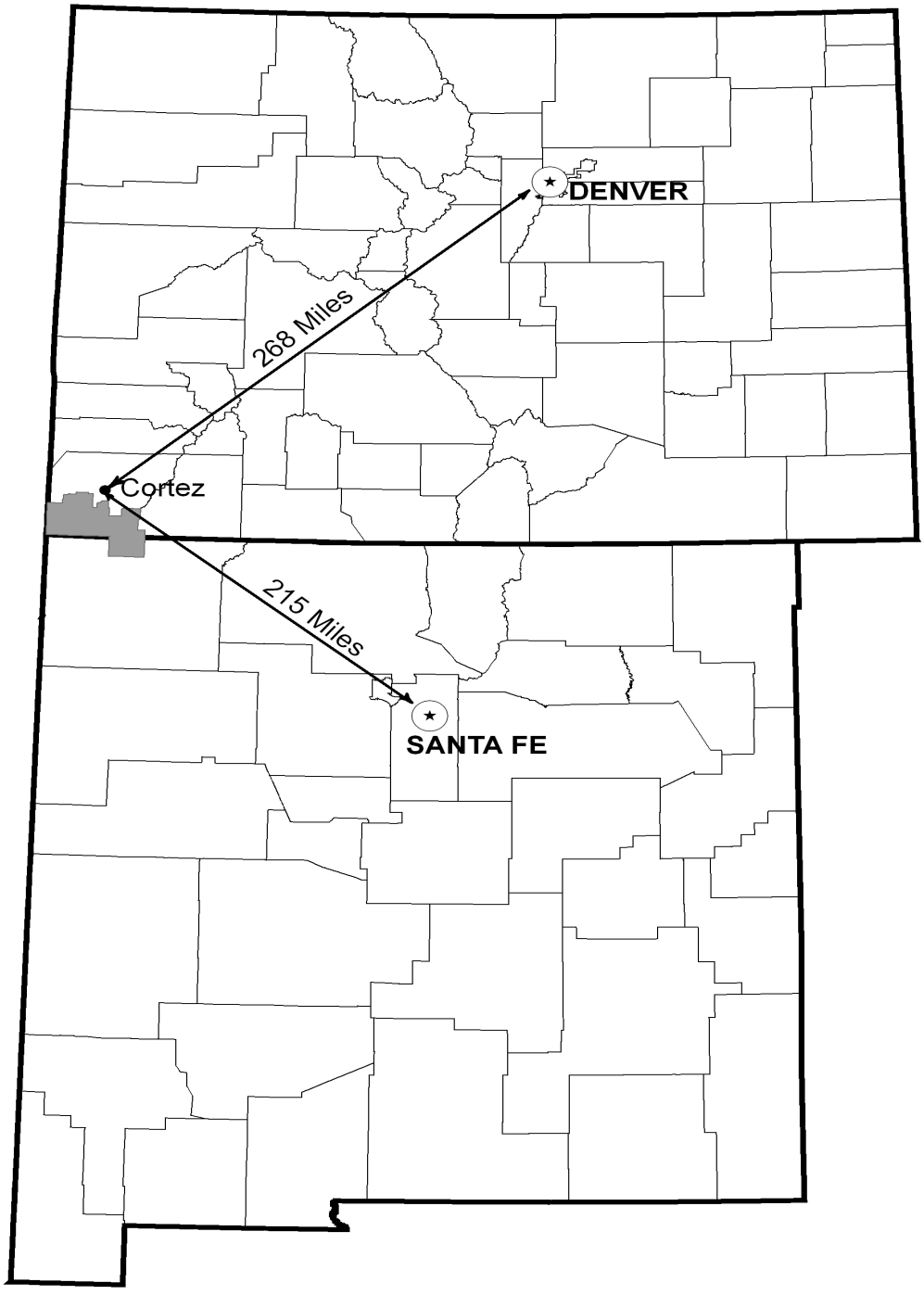

Figure 1.—Location of Ute Mountain Area in Colorado and New Mexico.

The soils of the survey area range widely in texture, depth, and other characteristics. Soils in the southwestern parts of the survey occur on rolling plains and have developed from the Mancos Shale Formation. These soils tend to be shallow and have textures ranging from loamy to clayey. High concentrations of gypsum and salts occur in many parts of the survey area. The eastern parts of the

survey area are mainly mesas with deep narrow canyons. This landform is developed by the resistant Mesa Verde Formation, which forms the southern portion of the Mesa Verde Plateau. Soils on the mesa tops are derived from reddish eolian mantle and tend to be shallowest near the edges of the mesas, rapidly increasing in depth as one moves toward the center of the mesa. Textures are silty to loamy, and the depth to calcium carbonate varies with the landscape position. The soils on the Sleeping Ute Mountains developed from igneous rocks that make up the prominent peaks of the mountains. These soils tend to be on steeper slopes and contain large numbers of rock fragments. Textures are generally loamy, and in many places there is a dark colored organic enriched surface layer.

History of the Ute Mountain SSA

The Ute Mountain Area has been occupied by different groups of peoples for well over a millennium. Some of the earliest evidence of these people can be found in the sites and ruins of the early Anasazi or Ancestral Puebloians. Their early living sites consisted of small pit houses and structures scattered across the area. They farmed and lived across the entire Four Corners area. Over time, they developed a more complex society, building large masonry complexes and moving into the alcoves and canyons of the Mesa Verde Plateau from the mesa tops. Near the end of the 1200s, drought and possible social problems led them to abandon the area, leaving only massive ruins to tell their story.

After their departure, nomadic bands from the north began to move into the areas of Colorado and Utah. These people would eventually become the Utes. Over time they extended their hunting and gathering ranges as far as the eastern plains of Colorado and northern New Mexico. Although earlier encounters with Europeans occurred, the earliest reference to the Utes was recorded by the Spanish in 1626. During the next two turbulent centuries, both alliances and conflicts developed between the Utes and the Spanish, Comanches, Apaches, and Navajos. At the end of the Mexican-American War in 1848, the traditional homeland of the Utes came under the control of the United States. In 1868, a treaty between the United States and the Utes was signed, granting them the western one-third of Colorado. In the ensuing years, conflicts and adjustments resulted in the Ute Reservations being reduced substantially. In 1895, Chief Ignacio led most of the Weeminuche band of Utes to the western part of the Southern Ute Reservation to protest of the U.S. government's policy of land allotments. A new agency was set up at Navajo Springs (later moved a short distance to Towaoc), and the Ute Mountain Ute Reservation was established (Ute Mountain Tribe, 1999).

Since the establishment of the Ute Mountain Ute Reservation, economic development has been slow. Major accomplishments have been the establishment of the Ute Mountain Tribal Park, the Ute Mountain Casino and Hotel and Convention Center, the delivery of irrigation water, and the development of the 7,800-acre Ute Mountain Farm and Ranch Enterprise.

Physiography

The Ute Mountain Soil Survey Area lies within the Colorado Plateau's physiographic province and consists of a gently sloping plain, high mesas, and the steep Ute Mountains. The plain slopes up to the northeast from the San Juan River (elevation 4,650) at the Four Corners and is mainly formed in soft Mancos Shale. The eastern portion of the area consists of the high mesas and deep canyons of the Mesa Verde Plateau. The mesas are formed by the resistant layers of Cliffhouse sandstone, which protects the softer underlying Mancos Shale from erosion. The mesas and canyons are bisected by the Mancos River, which runs from northeast to southwest and joins the San Juan River near the Four Corners. The Sleeping Ute

Mountains, rising to nearly 10,000 feet, consist of laccolithic intrusions of igneous rocks of Tertiary age. They occur in the north-central part of the survey area and have large alluvial fans radiating from their base out into the surrounding plain.

Geology

By Steve Lacy, Geomorphologist, NRCS

The Ute Mountain Soil Survey is located within the Canyon Lands section of the Colorado Plateau physiographic province (Fenneman, 1931). The Canyon Lands section covers southeastern Utah and southwestern Colorado. This large plateau area is characterized by numerous rugged canyons which have been dissected by rivers and streams. These canyons are not uniform across the area, and the region is not sharply defined from less dissected parts of the province. The survey area has a wide variety of geologic structures and topographic features within its boundaries, giving evidence of an active geologic history. The San Juan Basin lies to the south of the survey area; to the east are the cuestas and foothills flanking the Rocky Mountains. The northern boundary trends along McElmo Canyon and the southern edge of Mesa Verde National Park. The western boundary is formed by the Utah state line.

The survey area is dominated by Cretaceous and Tertiary-aged rocks. The Cretaceous-aged rocks were deposited in two different environments. The lower Cretaceous Burro Canyon Formation was deposited on an alluvial plain. Upper Cretaceous rocks consisting of marine, coastal, and alluvial deposits accumulated in or near the Western Interior Seaway. A drop in sea level at the end of the Early Cretaceous allowed stream erosion to erode valleys into the Burro Canyon Formation. The sea returned, resulting in the deposition of fluvial, deltaic, and marginal-marine sediments of the upper Cretaceous Dakota Sandstone and the overlying Mancos Shale. The Mesaverde Group forms a generally northeasterly prograding deltaic and strand-plain wedge that intertongues with the upper part of the underlying Mancos Shale and the lower part of the overlying marine Lewis Shale. The marginal-marine sediments of the Pictured Cliffs Sandstone, which overlie and interfinger with the upper part of the Lewis Shale, were deposited during the final regression of the Western Interior Sea from southwestern Colorado near the end of the late Cretaceous time. The Pictured Cliffs Sandstone is overlain by the alluvial, paludal, and lacustrine deposits of the uppermost Cretaceous Fruitland Formation and Kirtland Shale.

Limited amounts of Tertiary-aged rocks identified as the Animas Formation can be found in the southeastern portion of the survey. These fluvial sedimentary rocks were eroded from northerly sources and were the result of episodic uplift events during the Laramide orogeny. Basalt, diabase, and andesite dikes, sills, and stocks intrude the sedimentary rocks on the eastern side of the Reservation (Aubrey, 1991).

The largest Tertiary-aged eruptive structure is Sleeping Ute Mountain (fig. 2). The highest point of this laccolithic intrusive dome is Ute Peak at 9,977 feet. The mountain is complexly formed from three stocks and more than 20 laccoliths, along with numerous sills and dikes. The materials consist of closely related quartz diorite porphyries that were injected at relatively low temperatures throughout the Mancos Shale. Some exposures of heat-altered or metamorphosed Mancos Shale are found on portions of Sleeping Ute Mountain, including the area known as the Knees. The shale was metamorphosed by the intruding igneous materials. The Sleeping Ute eruptive center was active about 65 million years ago.

Lying between Sleeping Ute Mountain and Mesa Verde is the north-to-south-trending Montezuma Valley. Long fingers of paleo-fan remnant materials ranging from gravels to boulders extend from the flanks of Sleeping Ute Mountain onto the valley floor. These deposits are covered by deep eolian materials consisting of very fine sands and silts. The valley is carved into the Mancos Shale. The valley profile is

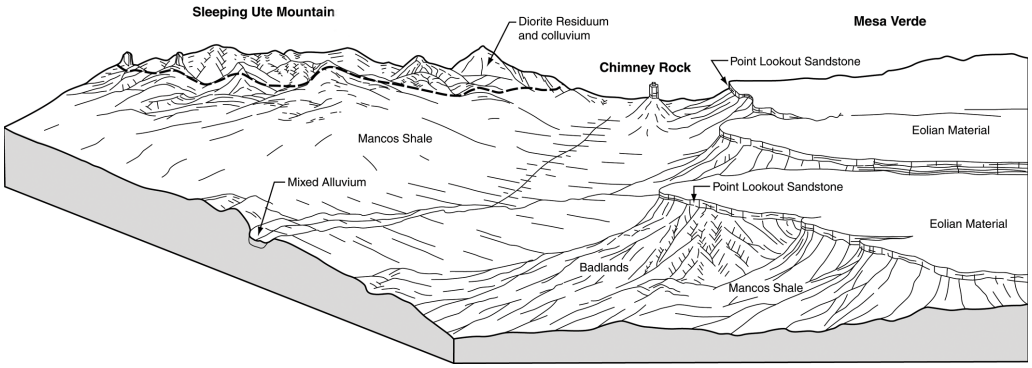

Figure 2.— Major geologic features of the Ute Mountain Area

generally flat, with some raised areas protected by resistant Juana Lopez Member limestone. The Mancos Shale that lies between Sleeping Ute Mountain and Mesa Verde has been eroded by water flowing through Navajo Wash over extended geologic time. Towards the western scarp of Mesa Verde, rock outcrops of Point Lookout Sandstone can be observed. These monuments are locally known as Chimney Rock and the Squaw and Papoose. The scarp face of the mesa is formed by the overlying Point Lookout Sandstone. The Menefee Shale and the Cliffhouse Sandstone can be found on top of the mesa and running back to the east, but have been eroded from the edge of the mesa. The Menefee has retreated from the scarp, but forms a level to rolling eroding plain that has been exposed by the removal of the overlying Cliffhouse Sandstone. The Cliffhouse Sandstone occurs towards the mesa's interior and forms an elevated bench above the Menefee Shale.

Mesa Verde is technically a cuesta that dips gently towards the south. The horizontally bedded Cretaceous rocks were lifted and tilted during the rise of the Sleeping Ute Mountain eruptive center. The highest elevations of Mesa Verde are outside of the area of the soil survey and are included in Mesa Verde National Park. Within the park, the highest elevation is 8,572 feet at Park Point. The southern portion of Mesa Verde rises to an elevation of around 6,000 feet. Parts of Mesa Verde retain evidence of ancient drainage from the La Plata Mountains in the form of water-tumbled gravels and cobbles. These deposits, found on parts of the mesa that rise 1,000 feet above the current Mancos River, point to the great age of those areas.

Mesa Verde is dissected by numerous northwest- to southeast-oriented canyons that drain into the Mancos River. The canyons in Mesa Verde are excellent examples of beheaded stream systems. The drainageways lost their upper watersheds when the mesa was raised along the Bauer Lake Fault. The mesa is dissected by the Mancos River cutting through in a southwestward direction. The Mancos River flows across the survey area before joining the San Juan River near the Four Corners Monument.

The geology encountered on the mesa is consistent with that of the previously described units. The sequence of exposed rocks originated in the transgressional and regressional movement of the Western Interior Sea. The Mancos Shale was deposited in quiet offshore conditions, and in places is as thick as 2,000 feet. It was deposited over a period of 10 million years and consists of both shale and limestone materials. The Mancos is exposed along the eroding flanks of Mesa Verde.

Overlying the Mancos is the Mesaverde Group of Cretaceous sediments. The Point Lookout Sandstone was deposited as the sea retreated and its wave energy increased. Evidence of this is preserved by ripple marks, crossbedding, and calcareous-sandstone concretions within the fine- to very fine-grained sandstone. Conformably overlying the Point Lookout Sandstone is 1,000 feet of slope-forming Menefee Formation. This unit consists of lenses of crossbedded sandstone,

mudstone, carbonaceous shale, and coal. The depositional environment was swamps, marshes, and low coastal plains that developed behind a regressing shoreline. Plant fossils are common in this unit.

The capping unit consists of the Cliff House Formation, which averages about 400 feet in thickness. Erosion caused by freeze-thaw cycles has created numerous alcoves in this formation. Water percolates downward through the sandstone until it encounters an impervious zone. The water then moves laterally, emerging at the ground surface where it can freeze and expand during cold weather, causing wedging and spalling of the exposed sandstone face. Eventually this process led to the formation of the large alcoves that were used by the ancestral pueblo people as building sites for their cliff dwellings after they retreated from their mesa-top pueblos. This sandstone gives evidence of shallow water, lagoonal, beach and barrier island depositional environments. At the end of the Cretaceous Period, the region was uplifted, causing the sea to retreat for the final time and giving rise to the present topographic expression. Red eolian soils now blanket the mesa tops and range in depth from a few inches near the mesa edges to 10 feet near the center of larger mesas. Quaternary sand, gravel, and cobble deposits flank the drainageways and streams flowing through the mesa, giving evidence of periods of higher precipitation during the ice ages.

The southern end of Mesa Verde trends into a broken plain and valley system formed on the southward-dipping Cliff House Sandstone, Menefee Shale, and Point Lookout Sandstone. A significant structural feature known as the Hogback is located in this area. The Hogback is a monoclinal fold with steeply dipping strata that defines the western edge of the San Juan Basin. Cretaceous-age rocks are exposed to the west of the fold, whereas basinward they are downwarped thousands of feet beneath Tertiary-aged sedimentary rocks.

South of Sleeping Ute Mountain lies a large, rolling plain formed on the Mancos Shale. The land slopes southward towards the Mancos River, which drains most of the survey area. Resistant outcrops of the Juana Lopez Member along with fan remnants flowing off the flanks of the mountain provide some high points on the plain. This has created a reversed topographic feature where the younger gravel-to-cobble-armored stream channel now has a higher elevation than the surrounding highly erosive shale plain. The Mancos Shale, which formed in the evaporating Western Interior Seaway, contains abundant gypsum crystals and other natural salts.

Natural Resources

Soil, grass, oil, and natural gas are the major natural resources of the survey area. The soil is the most important of the resources supporting the 7,800-acre Ute Farm, which produces alfalfa, corn, wheat, and triticale. The soil is also the key that allows for the production of forage for use by livestock across the survey area. Oil wells are found in the far western part of the area, and natural gas is produced from many wells in the southeast in the area of Barker Dome.

Climate

Prepared by the Natural Resources Conservation Service National Water and Climate Center, Portland, Oregon.

Climate tables are created from three nearby climate stations: Mesa Verde National Park and Cortez, Colorado; and Shiprock, New Mexico. There are no long-term climate stations within the soil survey area.

Thunderstorm days, relative humidity, percentage of sunshine, and wind information are estimated from First Order station Albuquerque, New Mexico.

Table 1 gives data on temperature and precipitation for the survey area as recorded at these three climate stations in the period 1971 to 2000. Table 2 shows

probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperatures at Mesa Verde, Cortez and Shiprock are 30.2, 29.0, and 32.6 degrees F, respectively. The average daily minimum temperatures in winter at these three locations are 19.5, 15.4 and 18.5 degrees. The lowest temperatures on record were -20 at Mesa Verde on January 13, 1963; -31 at Cortez on February 8, 1933; and -26 at Shiprock on December 12, 1961.

In summer, the average temperatures are 68.2, 68.3, and 73.7 degrees at Mesa Verde, Cortez and Shiprock, respectively. The average daily maximum temperatures in summer are 82.9, 85.5, and 92.4 degrees. The highest temperatures ever recorded were 100 degrees at Mesa Verde and 101 degrees at Cortez, both on July 13, 1971; and 107 degrees at Shiprock on July 20, 1997.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

Average annual total precipitation over the Ute Mountain Soil Survey area is generally between 8 and 14 inches, with the greatest amounts in the upper elevations near Mesa Verde National Park. At the three surrounding climate stations the annual averages are 18.58 inches at Mesa Verde, 13.48 inches at Cortez, and just 7.58 inches at Shiprock. Of these amounts about 40 percent usually falls in May through September, which is the growing season for most crops in this area. The heaviest 1-day precipitation during the periods of record were 2.20 inches at Mesa Verde on March 6, 1995; 1.96 inches at Cortez on September 22, 1941; and 2.90 inches at Shiprock on August 18, 1989. Thunderstorms occur on about 40 days each year, and most occur in July and August.

The average seasonal snowfall is quite variable over the area, with the greatest amounts near Mesa Verde and the lowest amounts along the southern border and the Four Corners area. At the climate stations, average annual snowfall is 82.8 inches at Mesa Verde, 19.4 inches at Cortez, and just 4.4 inches at Shiprock. The greatest snow depths at any one time during the periods of record were 39 inches at Mesa Verde, recorded on February 7, 1949; 21 inches at Cortez, recorded on December 21, 1967; and 12 inches at Shiprock, recorded on December 15, 1967. On average, the number of days per year having at least 1 inch of snow on the ground ranges from 94 days at Mesa Verde, to 16 days at Cortez, to less than one day per year at Shiprock. The heaviest 1-day snowfalls on record were 19.0 inches at Mesa Verde, recorded on March 24, 1964; 14.0 inches at Cortez, recorded on December 19, 1951; and 6.0 inches at Shiprock, recorded on January 5, 1973.

The average relative humidity in mid-afternoon is about 50 percent in the winter and about 20 percent in April through June. Humidity is higher at night, and the average at dawn is about 70 percent in the winter and about 45 percent in the June. The sun shines about 78 percent of the time in summer and about 65 percent in winter. The prevailing wind is from the south to southwest. Average wind speed is highest, around 10 to 12 miles per hour, from March to May.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the Ute Mountain Soil Survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage;

native plants; and the kinds of bedrock. Soil scientists working in the Ute Mountain Area dug many holes, using shovels, hydraulic probes, and backhoes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries. In order to verify the soil-vegetation-landscape relationships, specialists conducted a detailed vegetation inventory in association with the soil survey. They measured plant production and species composition throughout the area and correlated the ecological types to specific soil types. Having this information allows for a better understanding of the soil-vegetation-landscape relationships found in this area.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enabled them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, nine soil profiles are sampled in the area for laboratory analyses by the National Soil Survey Laboratory in Lincoln, Nebraska. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and the field experience of specialists.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a

high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Formation of Soils

Soil, in its traditional meaning, is the natural medium for the growth of land plants. The characteristics of this medium are determined by the interaction of five factors of soil formation—the *climate* under which the soil material accumulated and weathered; the *topography* or lay of the land; the *plant and animal* life that is on and in the soil material; the *time* that these activities have acted upon the material; and the physical and mineralogical composition of the *parent material.*

Climate and plant and animal life are the active factors of soil formation. They act on the parent material that has accumulated through the weathering of rock or that has been deposited by wind and water. They slowly change this material into a natural body that has genetically related horizons. The effects of climate and plant and animal life are conditions of topography. The kind of parent material also affects the kind of profile that is formed or, in extreme cases, determines it almost entirely. Finally, time is needed to change the parent material into a soil that has distinct horizons.

The factors of soil formation are so closely interrelated in their influence on the soil that few generalizations can be made regarding the effects of any one factor unless the conditions are specified for the other four. The factors of soil formation are not equal in their effect on soil formation, nor is any one factor equal under different conditions. In some places, any one factor may have a major influence on soil formation, while in another place it may be of little importance. The five factors of soil formation and the geology of the area are discussed in the following paragraphs.

Climate

Climate exerts a major influence on the physical and chemical weathering of the parent material and affects the amount of biological activity that takes place in and on the soil. Soil moisture and temperature are the main factors that affect the rate of soil formation; however, wind velocity and humidity play important roles in the formation of some soils.

The climate of this survey area ranges from hot, arid continental to cold subhumid mountain. The warmest and driest part of the survey area occurs in the southwest corner, along the San Juan River. To the northeast, as the land steadily gains in elevation, precipitation increases and the temperature decreases. Where the San Juan River enters Utah, the elevation is about 4,600 feet; mean annual precipitation is about 7 inches; and average annual air temperature is 54 degrees F. Cortez, just north of the survey area, at an elevation of 6,200 feet, has a mean annual precipitation of 13 inches, and an average annual air temperature of 48 degrees F. Mesa Verde National Park, along the northeastern edge of the survey at an elevation of 7,000 feet, has a mean annual precipitation of 18 inches, and an average annual air temperature of 48 degrees F. This gradual increase in precipitation and decrease in temperature affects the process of soil formation.

Soil moisture affects soil formation as it moves down through the soil, leaching calcium carbonate and soluble salts from the upper horizons and depositing them in the lower horizons. This water movement can also transport fine clay particles

downward through the soil profile, depositing them to develop argillic horizons. The formative effect of precipitation is illustrated by comparing differences among local soils of similar parent material and age. The Mack soil developed in an area of low precipitation; it has a weakly developed argillic horizon and high calcium carbonate content throughout. In the mid-elevation and precipitation range, the Wetherill soil exhibits greater development. This soil contains a well developed argillic horizon, upper horizons that have been leached of calcium carbonate, and strong accumulations of calcium carbonate in the lower, calcic horizon. In the highest elevation and precipitation zones, the Towaoc soil has been leached free of calcium carbonate throughout the profile. Clay movement is deeper, and the argillic horizon is thicker and more developed.

The climate also indirectly influences soil formation by influencing the amount and type of vegetation that occurs in an area; this directly relates to the type and amount of organic material that is returned to the soil. In the drier parts of the survey area where soil moisture is limited, plant growth is also limited, resulting in small amounts of organic material being returned to the soil. Consequently, soils such as Mack, Claysprings, and Yogovuci are relatively low in organic matter. In areas of higher precipitation, soils support dense stands of grass and shrubs and have corresponding increases in soil organic matter. Soils such as Towaoc, Herm, and Tragmon have sufficient quantities of organic material to produce dark, organic-rich mollic surface layers.

Topography

Topography influences soil formation primarily through associated water and temperature relationships; it also influences the deposition or removal of parent material. This survey area has an extremely varied topography which ranges from nearly level flood plains along the San Juan River and mesa tops to steep mesa and canyon sideslopes (fig. 3).

Topography affects the soil moisture state by influencing runoff and infiltration. On

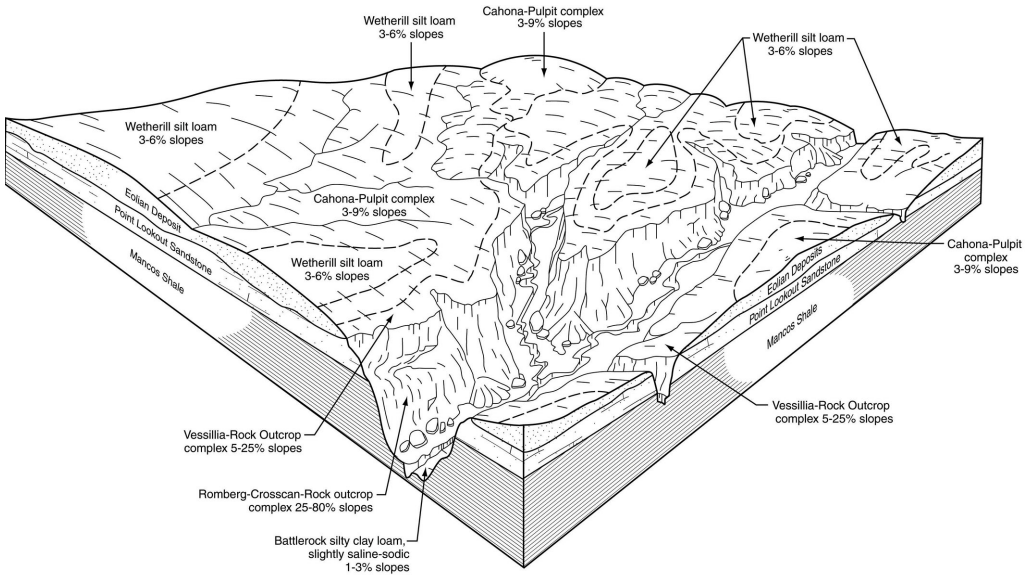

Figure 3.—Typical soils and their landscape positions in the Ute Mountain Area Soil Survey.

nearly level areas, soil runoff is minimal. Moisture infiltrates into the soil to a greater depth and thus promotes plant growth; the Battlerock soil is an example. Areas of steeper slopes lose much of their precipitation to runoff and thus have decreased soil moisture for plant growth and soil formation. The Romberg soil, which occurs on the steep canyon sideslopes, is an example of this topographical influence. Topography can also affect soil drainage. Mikett soils in nearly level drainageways receive runoff from steeper areas, and the resulting seasonal high water table affects the soil-forming processes. Oxidation and reduction processes, which take place alternately in these soils, lead to chemical and biologic changes.

Topography can have a major influence on the degree of deposition, erosion, and stability of the parent material. In many areas, such as those along streams and at the base of steeper areas, soil material accumulates and develops into very deep soils. Prater, Hesperus, and Sheek soils are examples of soils that form in depositional positions. Soils that form on steep ridges and canyon sideslopes tend to be shallow and lose soil material at a rate equal to soil formation. Crosscan, Dolcan, and Zigzag soils are examples of shallow soils that form on steep, erosional slopes.

Aspect has a major influence on soil formation in this survey area. Aspect and steepness of slope influence soil formation by their effects on the microclimate of the area. Southern aspects are warmer and drier than a site with similar elevation and climate that has a northern aspect. This feature can be noted in the major canyons of the survey area. South-facing areas have sparser vegetation and less organic matter than the north-facing slopes. North-facing areas retain snow longer in the winter and into the spring, have increased organic matter content, and support species of vegetation that require more moisture.

Plant and Animal Life

All forms of living organisms on and in the soil influence soil formation. The kinds of plants and organisms that occur at any location are a function of the soil moisture and temperature, and of the physical and chemical properties of the parent material.

In the southwestern part of the survey area, vegetation is sparse, salt-tolerant, and able to withstand long periods of little precipitation. To the northeast, vegetation increases to include sagebrush, juniper, pinyon, and more grasses and shrubs. The higher elevations of the Sleeping Ute Mountains support stands of ponderosa pine, Douglas fir, Gambel's oak, and grasses. In areas of poor drainage, soils form under dense stands of rushes, sedges, and water-tolerant plants. These soils are high in organic matter content and tend to be deeper than the well drained soils of surrounding areas.

Soil microorganisms affect soil formation in many ways. One of the most important is by the breakdown of plant residue into humus and organic compounds. This can occur rapidly if soil temperature and moisture are adequate. Because precipitation in the survey area occurs sporadically, activity of soil microbes fluctuates greatly during the year. Even so, this microbial activity is sufficient to break down the small amount of plant material that is returned to the soil in the drier areas of the survey area. Consequently, these soils have a low organic matter content in the surface layers, where the highest concentration of plant roots occurs. In areas of increased vegetative production, the surface layers contain increased amounts of organic material and may produce dark colored, organic-rich mollic horizons. In areas of very poorly drained soils, microbial activity is dominantly anaerobic. Under such conditions, decomposition is often incomplete, and undecomposed organic matter may accumulate on the soil surface. The Pogo soil is an example of a poorly drained soil.

Time

The age of the soil refers to the length of time the soil-forming processes have been active. Time is needed for the other soil-forming factors to proceed in the formation of a soil.

Soils in this survey area vary widely in the age or time in which the soil-forming factors have had to influence the soil. Recent deposits along the Mancos River may be only a few years old. The thick eolian deposits of the Mesa Verde Plateau have been developing for over 15,000 years. Radiating out from the Sleeping Ute Mountains are several landforms of significant age. At the times of major glaciations in other parts of the continent, heavy snows and major spring runoff events transported many igneous rocks out of the mountains, producing large and thick alluvial fans. One of the largest comes out of Cottonwood Wash and flows east and south to form the large and stable area on which the town of Towaoc is situated. Covered with eolian material, these fan remnants have developed soils with strongly cemented calcic horizons at the contact between the overlying soil and the underlying gravel, cobble, and stone. These deposits are exposed in the gravel pits north and east of Towaoc.

Another unique feature that radiates out from the Sleeping Ute Mountain is a series of paleoterraces. These narrow, gravel-covered ridges are the remains of a valley into which spring runoff from the mountains deposited sand, gravel, and cobble. These alluvial deposits of rounded material, 6 to 10 feet thick, protected the underlying Mancos Shale from erosion by providing an “armor plating” between the surrounding hill and the area underneath. Over a period from tens of thousands to hundreds of thousands of years, the landscape has become “inverted,” with the ancient streams now in the highest locations and the areas that were once the surrounding hills eroded away to an elevation several hundred feet lower.

A distinction must be made between chronologic age of landscape and the age of a soil as interpreted from the degree of genetic horizon formation. In some areas, normal geologic erosion allows little, if any, formation of genetic horizons because the soil is removed as rapidly as it is formed. Chronologically, these areas may be as old as those areas where the soils have well formed genetic horizons.

Parent Material

The parent material from which a soil forms has a major influence on the soil that develops. The soils found in this survey area have formed from many different types of parent material. The major kinds are *eolian, alluvium, colluvium, slope alluvium,* and *residuum* from sandstone and shale. The different parent materials affect the color, texture, mineralogy, consistence, chemical makeup, reaction, and natural fertility of the soils.

Eolian

These soils result from the deposition of reddish colored clay, silt, and very fine sand brought into this area by wind. These deposits originated in the red sedimentary formations found to the southwest of the survey area. This material was deposited in major episodes in the late Wisconsin and Recent geologic periods. Evidence suggests that the last major period of deposition was around 15,000 years ago (Price, 1988). These deposits occur on most of the stable mesa tops and benches in the area. These deposits and the resulting soils vary in depth from very shallow soils near mesa edges to soils 10 to 15 feet deep on very stable positions. Most of the area has experienced some degree of eolian influence. In some areas it was eroded away as

Figure 4.— Eolian-covered mesas extend to the horizon above Point Lookout sandstone that forms the cliffs above the soft Mancos shale. A broad fan piedmont forms from the base of the steep colluvial and residuum deposits below the cliffs. Along the valley floor, the alluvial deposits are dissected by the meandering Mancos River.

fast as it was deposited, whereas in other areas it was removed gradually over time. This eroded material is deposited in some of the alluvial deposits of the area. The Mack, Snaphill, Wetherill, and Morefield soils have developed in very deep eolian deposits (fig. 4).

Alluvium

These soils are the result of the deposition of material by water. These soils are found on flood plains, drainageways, and alluvial fans throughout the survey area. Their age is mainly Pleistocene and Recent. The deposits along the major flood plain of the Mancos River consist of stratified silt, sand, gravel, and cobbles with layers of finer textured material from mixed sources. These deposits originated in the La Plata Mountains to the northeast of the survey area and were moved long distances by water. The Ramper and Battlerock soils formed in recent alluvium along the Mancos River.

Alluvian deposits are associated with most of the major drainageways throughout the survey area. The source of these deposits is soil material which has been eroded from the surrounding hills and mesas. These soils have few coarse fragments and consist of very deep loamy, silty, and clayey deposits with fine stratification. Battlerock, Hope, and Cowboy soils formed in these deposits.

Alluvial deposits from the Mancos and Mesa Verde Formations south and west of Towaoc were deposited as broad alluvial fans that cover vast areas having relatively uniform slopes below the escarpments of the Mesa Verde Plateau. These soils have fine to loamy textures with fine stratification. Some of the soils formed in these deposits are Chimrock and Ravola.

Colluvium and Slope Alluvium

These deposits develop from the movement of material caused mainly by gravity and surface runoff. They generally are located at the base of steeper slopes and contain various amounts of angular coarse fragments from the geologic formations above. Precipitation and gravity work together to move material downslope and deposit it at the bases of steeper slopes. Sheek, Littlewater, and Katzine are soils that form in these deposits.

Residuum

Many soils in this survey area formed directly from material that has not been transported, but was weathered in place from the original geologic material. Sandstone and shale are the major geologic materials found throughout the survey area. Residual soils are normally very shallow or shallow and exhibit characteristics of the material from which they are forming. Soils that develop from shale tend to be clayey and calcareous and to overlie soft bedrock. Gypsey and Persayo soils have developed from the Mancos Shale. Soils that develop from sandstone are normally loamy to sandy and very shallow or shallow over hard bedrock. They may exhibit minimal horizon development or movement of calcium carbonate. The Farview and Gladel soils developed from Cliffhouse sandstone.

General Soil Map Units

The general soil map in this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape (fig. 5). Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

Soil descriptions

Soils of the Plains and Desert

This group consists of three map units. It makes up 36 percent of the survey area. The soils in this group are nearly level to gently sloping. The vegetation in this unit is mainly desert grasses, saltbushes, and forbs.

The soils in this group range from very deep to very shallow and are well drained. They have formed in alluvium and residuum mainly from material weathered from the Mancos Shale or from alluvial deposits of igneous material radiating out from the Ute Mountains.

Most of this area is used for livestock grazing. The 7,800 acre Ute Mountain Farm is located in this unit at the southwestern base of the Ute Mountains.

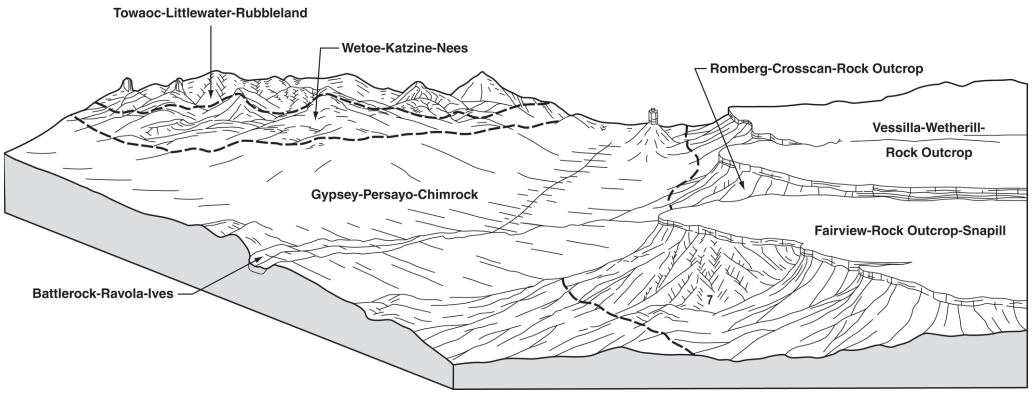

Figure 5.— Representative locations on the landscape for some of the General Soil Map units.

1. Bluechief-Mariano-Yogovuci

Setting

Location in survey area: Northwest part of area
Landform: Mesas, structural benches and fan remnants
Slope range: gently sloping to strongly sloping
Parent material: Eolian material or eolian material over mixed alluvium
Potential native vegetation: Alkali sacaton, galleta, saltbush
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Composition

This unit occurs in 6 percent of the survey area.
- Bluechief: 17 percent of unit
- Mariano: 13 percent of unit
- Yogovuci: 12 percent of unit

Minor components: 68 percent of unit
Other soils of minor extent:
- Redland on mesas and structural benches
- Mack on mesas and structural benches
- Sheppard on mesas

Characteristics of the Bluechief soil
Landform: Structural benches and mesas
Parent material: Eolian material from sandstone
Depth class: Moderately deep
Drainage class: Well drained
Surface layer: Brown fine sandy loam
Substratum layer: Brown fine sandy loam
Bedrock: Sandstone at 20 to 40 inches

Characteristics of the Mariano soil
Landform: Fan remnants
Parent material: Eolian material over alluvium derived from diorite
Depth class: Very deep
Drainage class: Well drained
Surface layer: Brown very fine sandy loam
Substratum layer: White extremely gravelly sandy loam

Characteristics of the Yogovuci soil
Landform: Fan remnants
Parent material: Eolian material over alluvium derived from mixed sources
Depth class: Very deep
Drainage class: Well drained
Surface layer: Light brown very fine sandy loam
Substratum layer: Light yellowish brown clay loam

Major Current Uses

Rangeland and cropland

General Management Factors

Rangeland: Low productivity

Cropland: Low precipitation
Building site: Depth to bedrock, gypsum

2. Gypsey-Persayo-Chimrock

Setting

Location in survey area: Western part of area
Landform: Plains, mesas, pediments, and hills
Slope range: Undulating to steep
Parent material: Residuum or slope alluvium from shale
Potential native vegetation: alkali sacaton, saltbush, greasewood
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Composition

This unit occurs in 25 percent of the survey area.
- Gypsey: 12 percent of unit
- Persayo: 12 percent of unit
- Chimrock: 7 percent of unit

Minor components: 69 percent of unit
Other soils of minor extent:
- Decorock on paleoterraces
- Cowboy on floodplains
- Oagamati on pediments
- Hope on alluvial flats

Characteristics of the Gypsey soil
Landform: Pediments and hills
Parent material: Residuum derived from shale
Depth class: Moderately deep
Drainage class: Well drained
Surface layer: Light yellowish brown sandy clay loam
Substratum layer: Very pale brown gypsiferous loam
Bedrock: Shale at 20 to 40 inches

Characteristics of the Persayo soil
Landform: Pediments and hills
Parent material: Residuum from shale
Depth class: Very shallow and shallow
Drainage class: Well drained
Surface layer: Pale brown loam
Substratum layer: Pale brown silty clay loam
Bedrock: Shale at 6 to 20 inches

Characteristics of the Chimrock soil
Landform: Fan pediments
Parent material: Slope alluvium derived from shale and sandstone
Depth class: Very deep
Drainage class: Well drained
Surface layer: Light yellowish brown loam
Substratum layer: Pale brown loam

Major Current Uses

Rangeland

General Management Factors

Rangeland: Low productivity
Cropland: Depth to bedrock
Building site: Gypsum and depth to bedrock

3. Battlerock-Ravola-Ives

Setting

Location in survey area: Southwest part of the area
Landform: Flood plains
Slope range: Gently sloping to moderately sloping
Parent material: Alluvium derived from mixed sources
Potential native vegetation: alkali sacaton, galleta, greasewood
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Composition

This unit occurs in 5 percent of the survey area.
- Battlerock: 21 percent of unit
- Ravola: 16 percent of unit
- Ives: 8 percent of unit

Minor components: 55 percent of unit
Other soils of minor extent:
- Cowboy on floodplains
- Blackston on terraces
- Jeddito on terraces
- Elias on terraces

Characteristics of the Battlerock soil
Landform: Flood plains
Parent material: Alluvium derived from sandstone and shale
Depth class: Very deep
Drainage class: Well drained
Surface layer: Pale brown silty clay loam
Substratum layer: Pale brown clay loam

Characteristics of the Ravola soil
Landform: Flood plains
Parent material: Alluvium derived from shale
Depth class: Very deep
Drainage class: Well drained
Surface layer: Pale brown silt loam
Substratum layer: Pale brown silt loam

Characteristics of the Ives soil
Landform: Flood plains
Parent material: Alluvium derived from mixed sources
Depth class: Very deep

Drainage class: Well drained
Surface layer: Dark yellowish brown sandy loam
Substratum layer: Light yellowish brown stratified loamy sand to sandy loam

Major Current Uses

Rangeland

General Management Factors

Rangeland: Low production
Cropland: Low precipitation
Building site: Gypsum

Soils of the Mesa and Canyons

This group consists of four map units. It makes up 58 percent of the survey area. The soils in this group are nearly level to very steep. The vegetation in this unit is mainly pinyon pine, Utah juniper with an understory of grass, and annual forbs.

The soils in this group range from very deep to very shallow and are well drained. The soils of the broad mesa tops tend to be silty and contain very few rock fragments. The soils of the steeper slopes are generally loamy and contain large amounts of rock fragments (fig. 6).

Most of this unit is used for livestock grazing. Steep areas are used as watersheds.

Figure 6.—General soils map unit 7, Romberg-Crosscan-Rock outcrop, along the sides of Soda Canyon. Map unit 6, Vessilla-Wetherill-Rock outcrop, is located on the flat mesa tops.

4. Farview-Rock outcrop-Snapill

Setting

Location in survey area: Southeast part of the area
Landform: Mesas and structural benches
Slope range: Undulating to hilly
Parent material: Residuum and eolian material from sandstone
Potential native vegetation: Juniper, pinyon, sage, and grass
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Composition

This unit occurs in 8 percent of the survey area.
- Farview: 25 percent of unit
- Rock outcrop: 14 percent of unit
- Snapill: 9 percent of unit

Minor components: 52 percent of unit
Other soils of minor extent:
- Barx on mesas
- Gapmesa on mesas
- Zyme on hills
- Rizno on mesas

Characteristics of the Farview soil
Landform: Mesas and structural benches
Parent material: Residuum and eolian material from sandstone
Depth class: very shallow to shallow
Drainage class: Well drained
Surface layer: Light brown channery loamy sand
Substratum layer: Light brown channery loam
Bedrock: Sandstone at 4 to 20 inches

Characteristics of the Rock outcrop
Landform: Mesas and structural benches
Parent material: Residuum derived from sandstone

Characteristics of the Snapill soil
Landform: Mesas
Parent material: eolian material derived from sandstone
Depth class: deep
Drainage class: Well drained
Surface layer: Brown very fine sandy loam
Substratum layer: Brown loam
Bedrock: Sandstone at 40 to 60 inches

Major Current Uses

Rangeland

General Management Factors

Rangeland: Woody species
Cropland: Depth to bedrock
Building site: Depth to bedrock

5. Awitava-Zyme-Katzine, dry

Setting

Location in survey area: Around base of Ute Mountain
Landform: Fan remnants and hills
Slope range: Gently rolling to very steep
Parent material: Slope alluvium derived from diorite and residuum from shale
Potential native vegetation: Juniper, pinyon, sage, and grass
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Composition

This unit occurs in 2 percent of the survey area.
- Awitava: 45 percent of unit
- Zyme: 18 percent of unit
- Katzine, dry: 14 percent of unit

Minor components: 23 percent of unit
Other soils of minor extent:
- Barx on structural benches
- Rock outcrop on structural benches

Characteristics of the Awitava soil
Landform: Fan remnants
Parent material: Alluvium derived from diorite
Depth class: Very deep
Drainage class: Well drained
Surface layer: Brown extremely gravelly very fine sandy loam
Substratum layer: Pinkish gray extremely gravelly sandy loam

Characteristics of the Zyme soil
Landform: Hills
Parent material: Residuum derived form shale
Depth class: very shallow and shallow
Drainage class: Well drained
Surface layer: Pale brown very channery clay loam
Substratum layer: Pale brown clay loam
Bedrock: Shale at 6 to 20 inches

Characteristics of the Katzine, dry soil
Landform: Mountain slopes
Parent material: Slope alluvium and colluvium derived from diorite
Depth class: Very deep
Drainage class: Well drained
Surface layer: brown very gravelly fine sandy loam
Substratum layer: pink extremely gravelly fine sandy loan

Major Current Uses

Rangeland

General Management Factors

Rangeland: Woody species, limited available water capacity
Cropland: Rock fragments, slope
Building site: Slope, depth to bedrock

6. Vessilla-Wetherill-Rock outcrop

Setting

Location in survey area: Eastern part of the area
Landform: Mesas, paleoterraces, structural benches
Slope range: Gently sloping to moderately steep
Parent material: Eolian material and residuum from sandstone
Potential native vegetation: Pinyon, juniper, sage, and grass
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Composition

This unit occurs in 21 percent of the survey area.
- Vessilla: 28 percent of unit
- Wetherill: 16 percent of unit
- Rock outcrop: 11 percent of unit

Minor components: 45 percent of unit
Other soils of minor extent:
- Kucu on paleoterraces
- Arabrab on mesas
- Longburn on mesas

Characteristics of the Vessilla soil
Landform: Mesas and structural benches
Parent material: Eolian material and slope alluvium derived from sandstone
Depth class: Very shallow and shallow
Drainage class: Well drained
Surface layer: Brown channery fine sandy loam
Substratum layer: Pale brown fine sandy loam
Bedrock: Sandstone at 6 to 20 inches

Characteristics of the Wetherill soil
Landform: Mesas, paleoterraces
Parent material: Eolian material derived from sandstone
Depth class: Very deep
Drainage class: Well drained
Surface layer: Reddish brown silt loam
Substratum layer: Reddish brown silt loam

Characteristics of the Rock outcrop
Landform: Mesas and structural benches
Parent material: Residuum derived from sandstone

Major Current Uses

Rangeland

General Management Factors

Rangeland: Woody species, depth to bedrock
Cropland: Depth to bedrock
Building site: Depth to bedrock

7. Romberg-Crosscan-Rock outcrop

Setting

Location in survey area: Eastern part of the area
Landform: Canyons
Slope range: Rolling to very steep
Parent material: Residuum and slope alluvium from sandstone and shale
Potential native vegetation: Pinyon, juniper, sage, and grass
Elevation: 5,400 to 7,400 feet
Mean annual precipitation: 10 to 16 inches
Mean annual air temperature: 46 to 52 degrees F.
Freeze-free period: 100 to 135 days

Composition

This unit occurs in 27 percent of the survey area.
- Romberg: 21 percent of unit
- Crosscan: 18 percent of unit
- Rock outcrop: 11 percent of unit

Minor components: 73 percent of unit
Other soils of minor extent:
- Strych on fan terraces
- Eagleye on structural benches
- Sheek on canyons

Characteristics of the Romberg soil
Landform: Canyons
Parent material: Slope alluvium and colluvium derived from sandstone and shale
Depth class: Very deep
Drainage class: Well drained
Surface layer: Brown very stony loam
Substratum layer: Brown very stony clay loam

Characteristics of the Crosscan soil
Landform: Canyons
Parent material: Residuum derived from sandstone and shale
Depth class: Very shallow and shallow
Drainage class: Well drained
Surface layer: Dark grayish brown very gravelly loam
Substratum layer: Dark grayish brown very gravelly clay loam
Bedrock: Shale is at 6 to 20 inches

Characteristics of the Rock outcrop
Landform: Mesas and structural benches
Parent material: Residuum derived from sandstone

Major Current Uses

Watershed

General Management Factors

Rangeland: Slope
Cropland: Slope, depth to bedrock
Building site: Slope

Soils of the Mountains

This group consists of two map units. It makes up 6 percent of the survey area. The soils in this group are steep to very steep. The vegetation in this unit is mainly pinyon pine and Utah juniper at lower elevations with Gambel oak at the mid elevations. High elevations and north aspects contain pockets of Douglas fir.

The soils in this group range from very shallow to very deep and are well drained. They have formed in slope alluvium and residuum from diorite. Most of this unit is used for wildlife habitat and as a watershed.

8. Wetoe-Katzine-Nees

Setting

Location in survey area: Slopes of Ute Mountain
Landform: Mountains
Slope range: Hilly to very steep
Parent material: Colluvium and slope alluvium derived from diorite
Potential native vegetation: Pinyon, juniper, serviceberry, and grass,
Elevation: 6,200 to 8,800 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Composition

This unit occurs in 4 percent of the survey area.
- Wetoe: 31 percent of unit
- Katzine: 18 percent of unit
- Nees: 13 percent of unit

Minor components: 38 percent of unit
Other soils of minor extent:
- Wetherill on paleoterraces
- Cahona on fan remnants
- Zigzag on hills

Characteristics of the Wetoe soil
Landform: Mountains
Parent material: Slope alluvium and colluvium derived from diorite
Depth class: Very deep
Drainage class: Well drained
Surface layer: Dark brown very gravelly loam
Substratum layer: Brown very gravelly loam

Characteristics of the Katzine soil
Landform: Mountains
Parent material: Slope alluvium and colluvium derived from diorite
Depth class: Very deep
Drainage class: Well drained
Surface layer: Very gravelly fine sandy loam
Substratum layer: Pink extremely gravelly sandy loam

Characteristics of the Nees soil
Landform: Mountains
Parent material: Residuum derived from diorite
Depth class: Very shallow to shallow

Drainage class: Well drained
Surface layer: Brown very cobbly loam
Substratum layer: Strong brown extremely cobbly loam
Bedrock: Diorite at 6 to 20 inches

Major Current Uses

Watershed

General Management Factors

Rangeland: Slope, woody species
Cropland: Slope
Building site: Slope, depth to bedrock

9. Towaoc-Littlewater-Rubble land

Setting

Location in survey area: Upper slopes of Ute Mountain
Landform: Mountains
Slope range: Rolling to very steep
Parent material: Slope alluvium and colluvium from diorite
Potential native vegetation: Oak, Douglas fir, and grass
Elevation: 7,100 to 9,900 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F.
Freeze-free period: 80 to 190 days

Composition

This unit occurs in 2 percent of the survey area.
- Towaco: 45 percent of unit
- Littlewater: 14 percent of unit
- Rubbleland: 12 percent of unit

Minor components: 29 percent of unit
Other soils of minor extent:
- Herm on mountains
- Wetoe on mountains
- Nees on ridges

Characteristics of the Towaoc soil
Landform: Mountains
Parent material: Slope alluvium and colluvium derived from diorite
Depth class: Very deep
Drainage class: Well drained
Surface layer: Brown very gravelly sandy loam
Substratum layer: Strong brown very gravelly loam

Characteristics of the Littlewater soil
Landform: Mountains
Parent material: Slope alluvium and colluvium derived from diorite
Depth class: Very deep
Drainage class: Well drained
Surface layer: Dark brown very gravelly silt loam
Subsurface layer: Yellowish brown very gravelly loam
Substratum layer: Strong brown very gravelly loam

Characteristics of the Rubble land
Landform: Mountain
Parent material: Colluvium derived from diorite
Depth class: Very deep
Drainage class: Well drained

Major Current Uses

Watershed

General Management Factors

Rangeland: Slope
Cropland: Slope
Building site: Slope

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown

on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Mariano fine sandy loam, 3 to 6 percent slopes, is a phase of the Mariano series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Cowboy-Kava complex, 3 to 12 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Decorock-Salamander association, 3 to 30 percent slopes, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Badlands is an example.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Soil Descriptions

1—Arabrab-Longburn complex, 3 to 15 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,800 to 7,800 feet
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F.
Freeze-free period: 130 to 150 days

Map Unit Composition

Arabrab and similar soils: 45 percent
Longburn and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Arabrab soils
Landform: Mesas
Parent material: Eolian deposits and residuum weathered from sandstone
Slope: 3 to 15 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None

Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Shallow Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, Utah serviceberry, antelope bitterbrush, bottlebrush squirreltail, cliff fendlerbush, true mountainmahogany
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 4 inches: loamy sand
4 to 13 inches: loam
13 to 16 inches: clay loam
16 inches: sandstone

Longburn soils
Landform: Mesas
Parent material: Eolian deposits and residuum weathered from sandstone
Slope: 3 to 15 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 1.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Shallow Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, Utah serviceberry, antelope bitterbrush, bottlebrush squirreltail, cliff fendlerbush, true mountainmahogany
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 1 inch: cobbly fine sandy loam
1 inch to 4 inches: very cobbly fine sandy loam
4 to 17 inches: very cobbly clay loam
17 inches: sandstone

Minor Components
Rock outcrop
Composition: About 10 percent
Landform: Mesas
Slope: 3 to 100 percent
Roubideau and similar soils
Composition: About 3 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to bedrock
Morefield and similar soils

Composition: About 2 percent
Landform: Mesas
Distinguishing characteristics: Very deep to bedrock

Major Uses

Livestock grazing

2—Awitava extremely gravelly very fine sandy loam, 3 to 9 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Awitava and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Awitava soils
Landform: Fan remnants
Parent material: Eolian deposits over alluvium derived from diorite
Slope: 3 to 9 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.0 to 0.001 in/hr (impermeable)
Available water capacity: About 2.5 inches (very low)
Shrink-swell potential: About 0.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 80 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 2 (slightly sodic)
Ecological site: Semidesert Juniper Loam
Potential native vegetation: Utah juniper, New Mexico feathergrass, Indian ricegrass, alkali sacaton, galleta, Wyoming big sagebrush, sand dropseed, shadscale saltbush, green Mormon tea
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 1 inch: extremely gravelly very fine sandy loam
1 inch to 4 inches: gravelly very fine sandy loam
4 to 10 inches: very gravelly loam
10 to 21 inches: extremely gravelly sandy loam
21 to 80 inches: extremely gravelly sandy loam

Minor Components
Katzine and similar soils
Composition: About 10 percent
Landform: Fan remnants
Distinguishing characteristics: Lacks petrocalcic material
Zyme and similar soils
Composition: About 5 percent
Landform: Fan remnants
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

3—Badland-Rock outcrop complex

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 8,500 feet
Mean annual precipitation: 7 to 20 inches
Mean annual air temperature: 43 to 56 degrees F.
Freeze-free period: 80 to 160 days

Map Unit Composition

Badland: 75 percent
Rock outcrop: 15 percent
Minor components: 10 percent

Component Descriptions

Badland
Landform: Escarpments
Parent material: Shale
Slope: 8 to 15 percent
Depth to restrictive feature: 0 to 3 inches to bedrock (paralithic)
Land capability subclass (nonirrigated): 8s

Rock outcrop
Landform: Escarpments
Parent material: Sandstone
Slope: 8 to 20 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Ravola and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Occasional flooding
Persayo and similar soils
Composition: About 3 percent
Landform: Escarpments
Distinguishing characteristics: Shallow to bedrock

Farb and similar soils
Composition: About 2 percent
Landform: Escarpments
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

4—Barx-Gapmesa complex, 2 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Barx and similar soils: 60 percent
Gapmesa and similar soils: 30 percent
Minor components: 10 percent

Component Descriptions

Barx soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 2 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 9.4 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Semidesert Loam
Potential native vegetation: Wyoming big sagebrush, galleta, Indian ricegrass, muttongrass, New Mexico feathergrass, blue grama, fourwing saltbush, winterfat, sand dropseed
Land capability subclass (nonirrigated): 4c

Typical Profile:
0 to 3 inches: loam
3 to 31 inches: sandy clay loam
31 to 60 inches: sandy clay loam

Gapmesa soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone

Slope: 2 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 2.8 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Loam
Potential native vegetation: New Mexico feathergrass, galleta, Indian ricegrass, Wyoming big sagebrush, blue grama, western wheatgrass, winterfat
Land capability subclass (nonirrigated): 4c

Typical Profile:
0 to 2 inches: very fine sandy loam
2 to 21 inches: gravelly very fine sandy loam
21 to 28 inches: gravelly sandy loam
28 inches: sandstone

Minor Components
Rock outcrop
Composition: About 5 percent
Landform: Mesa
Sharps and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to soft bedrock

Major Uses

Livestock grazing

5—Barx loam, 6 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Barx and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Barx soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone

Slope: 6 to 12 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 9.4 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Semidesert Loam
Potential native vegetation: Wyoming big sagebrush, galleta, Indian ricegrass, muttongrass, New Mexico feathergrass, blue grama, fourwing saltbush, sand dropseed, winterfat
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 3 inches: loam
3 to 31 inches: sandy clay loam
31 to 80 inches: sandy clay loam

Minor Components
Gapmesa and similar soils
Composition: About 10 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to bedrock
Rizno and similar soils
Composition: About 4 percent
Landform: Mesas
Distinguishing characteristics: Shallow to bedrock
Rock outcrop
Composition: About 1 percent
Landform: Mesas

Major Uses

Livestock grazing

6—Barx very fine sandy loam, 1 to 4 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Barx and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Barx soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 1 to 4 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 10.2 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Semidesert Loam
Potential native vegetation: Wyoming big sagebrush, galleta, Indian ricegrass, muttongrass, New Mexico feathergrass, blue grama, fourwing saltbush, winterfat, sand dropseed
Land capability subclass (nonirrigated): 4c

Typical Profile:
0 to 3 inches: very fine sandy loam
3 to 9 inches: fine sandy loam
9 to 23 inches: sandy clay loam
23 to 36 inches: sandy clay loam
36 to 55 inches: sandy clay loam
55 to 60 inches: sandy clay loam

Minor Components
Gapmesa and similar soils
Composition: About 7 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to bedrock
Rizno and similar soils
Composition: About 2 percent
Landform: Mesas
Distinguishing characteristics: Shallow to bedrock
Rock outcrop
Composition: About 1 percent
Landform: Mesas

Major Uses

Livestock grazing

7—Battlerock clay loam, 0 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet

Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Battlerock and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Battlerock soils
Landform: Flood plains
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.2 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: Rare
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Alkali Bottom
Potential native vegetation: alkali sacaton, greasewood, inland saltgrass, basin big sagebrush, fourwing saltbush, galleta, shadscale saltbush, western wheatgrass
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 10 inches: clay loam
10 to 60 inches: clay loam

Minor Components
Recapture and similar soils
Composition: About 10 percent
Landform: Flood plains
Distinguishing characteristics: High amounts of sodium
Yarts and similar soils
Composition: About 4 percent
Landform: Flood plains
Distinguishing characteristics: Sandy textures
Romberg and similar soils
Composition: About 1 percent
Landform: Hills
Distinguishing characteristics: Steeper slopes and rock fragments

Major Uses

Livestock grazing

8—Battlerock silt loam, moderately saline, sodic, 0 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Battlerock, saline-sodic and similar soils: 70 percent
Minor components: 30 percent

Component Descriptions

Battlerock, saline-sodic soils
Landform: Flood plains, drainageways
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 7.1 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Very Rare
Seasonal high water table depth: None
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 30 (strongly sodic)
Ecological site: Alkali Bottom
Potential native vegetation: alkali sacaton, greasewood, mound saltbush, fourwing saltbush, galleta, inland saltgrass, shadscale saltbush, western wheatgrass
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 1 inch: silt loam
1 inch to 14 inches: stratified loam to silty clay loam
14 to 80 inches: stratified loamy sand to silt loam

Minor Components
Battlerock and similar soils
Composition: About 15 percent
Landform: Drainageways, flood plains
Flooding hazard: None
Distinguishing characteristics: Non-saline and non-sodic
Ravola and similar soils
Composition: About 5 percent
Landform: Drainageways, flood plains

Distinguishing characteristics: Silty textures
Ives and similar soils
Composition: About 5 percent
Landform: Drainageways, flood plains
Distinguishing characteristics: Sandy textures
Cowboy and similar soils
Composition: About 3 percent
Landform: Drainageways, flood plains
Distinguishing characteristics: Clayey textures
Persayo and similar soils
Composition: About 1 percent
Landform: Hillslopes
Distinguishing characteristics: Shallow to bedrock
Water
Composition: About 1 percent
Landform: Drainageways, flood plains

Major Uses

Livestock grazing

9—Battlerock silty clay loam, slightly saline, sodic, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Battlerock, slightly saline-sodic and similar soils: 70 percent
Minor components: 30 percent

Component Descriptions

Battlerock, slightly saline-sodic soils
Landform: Flood plains, drainageways
Parent material: Alluvium derived from sandstone and shale
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 10.1 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 20 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Alkali Bottom

Potential native vegetation: alkali sacaton, greasewood, fourwing saltbush, galleta, inland saltgrass, shadscale saltbush, western wheatgrass
Land capability subclass (irrigated): 2e
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 3 inches: silty clay loam
3 to 6 inches: clay loam
6 to 80 inches: stratified loam to silty clay loam

Minor Components
Ravola and similar soils
Composition: About 10 percent
Landform: Drainageways, flood plains
Distinguishing characteristics: Silty textures
Ives and similar soils
Composition: About 10 percent
Landform: Drainageways, flood plains
Distinguishing characteristics: Sandy textures
Cowboy and similar soils
Composition: About 5 percent
Landform: Drainageways, flood plains
Distinguishing characteristics: Clayey textures
Persayo and similar soils
Composition: About 4 percent
Landform: Hillslopes
Distinguishing characteristics: Shallow to bedrock
Water
Composition: About 1 percent
Landform: Drainageways, flood plains

Major Uses

Livestock grazing

10—Bebeevar-Walrees complex, 0 to 2 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Bebeevar and similar soils: 60 percent
Walrees and similar soils: 25 percent
Minor components: 15 percent

Component Descriptions

Bebeevar soils
Landform: Flood plains
Parent material: Alluvium derived from mixed sources

Slope: 0 to 2 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Moderately well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 3.6 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Occasional
Seasonal high water table depth: About 42 to 60 inches
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Salt Meadow
Potential native vegetation: alkali sacaton, galleta, inland saltgrass, fourwing saltbush, greasewood, rush, sedge, shadscale saltbush, western wheatgrass
Land capability subclass (nonirrigated): 4s

Typical Profile:
0 to 4 inches: loamy sand
4 to 70 inches: stratified very gravelly coarse sand to very fine sandy loam

Walrees soils
Landform: Flood plains
Parent material: Alluvium derived from mixed sources
Slope: 0 to 1 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Somewhat poorly drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 4.4 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Frequent
Seasonal high water table depth: About 24 to 42 inches
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Salt Meadow
Potential native vegetation: alkali sacaton, galleta, inland saltgrass, black greasewood, fourwing saltbush, rush, sedge, shadscale, western wheatgrass
Land capability subclass (nonirrigated): 4w

Typical Profile:
0 to 4 inches: fine sandy loam
4 to 30 inches: stratified loamy fine sand to silty clay loam
30 to 62 inches: stratified very gravelly coarse sand to sand

Minor Components
Water
Composition: About 5 percent
Landform: Stream channel
Riverwash
Composition: About 5 percent
Landform: Flood plains

Green River and similar soils
Composition: About 5 percent
Landform: Flood plains
Distinguishing characteristics: Rare flooding

Major Uses

Livestock grazing

11—Benally fine sandy loam, 1 to 5 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Benally and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Benally soils
Landform: Mesas, plateaus, structural benches, fan remnants
Parent material: Alluvium and eolian deposits and residuum weathered from sandstone and shale
Slope: 1 to 5 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 3.9 inches (low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 25 mmhos/cm (strongly saline)
Sodium adsorption ratio maximum: About 80 (strongly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, Indian ricegrass, bottlebrush squirreltail, sand dropseed, winterfat
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 3 inches: fine sandy loam
3 to 14 inches: loam
14 to 41 inches: clay loam
41 to 65 inches: silty clay loam

Minor Components
Hoskay and similar soils
Composition: About 10 percent

Landform: Terraces
Distinguishing characteristics: Higher clay content
Kimbeto and similar soils
Composition: About 5 percent
Landform: Terraces
Distinguishing characteristics: Deep to bedrock
Ravola and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Occasional flooding

Major Uses

Livestock grazing

12—Blackston-Camac-Rock outcrop complex, 0 to 60 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Blackston and similar soils: 55 percent
Camac and similar soils: 20 percent
Rock outcrop: 15 percent
Minor components: 10 percent

Component Descriptions

Blackston soils
Landform: Terraces
Parent material: Alluvium derived from mixed sources
Slope: 0 to 2 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 3.1 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Alkali Flat
Potential native vegetation: Indian ricegrass, shadscale saltbush, galleta, bottlebrush squirreltail, fourwing saltbush

Land capability subclass (irrigated): 4e
Land capability subclass (nonirrigated): 7c

Typical Profile:
0 to 3 inches: gravelly sandy loam
3 to 9 inches: sandy loam
9 to 15 inches: gravelly sandy clay loam
15 to 35 inches: very gravelly coarse sandy loam
35 to 70 inches: very cobbly loamy coarse sand, very cobbly coarse sand

Camac soils
Landform: Terraces
Parent material: Alluvium derived from mixed sources over residuum weathered from shale and siltstone
Slope: 15 to 60 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 3.7 inches (low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: galleta, shadscale, Indian ricegrass, saline wildrye, bottlebrush squirreltail, alkali sacaton
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 3 inches: very cobbly fine sandy loam
3 to 17 inches: gravelly loam, gravelly fine sandy loam, gravelly sandy clay loam
17 to 31 inches: loam, silt loam, clay loam
31 inches: shale

Rock outcrop
Landform: Cliffs
Parent material: Sandstone
Slope: 8 to 20 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Fruitland and similar soils
Composition: About 5 percent
Landform: Remnant fans
Distinguishing characteristics: Fewer coarse fragments
Mesa and similar soils
Composition: About 5 percent
Landform: Terraces
Distinguishing characteristics: Presence of a water table

Major Uses

Livestock grazing

13—Bluechief fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Bluechief and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Bluechief soils
Landform: Mesas, structural benches
Parent material: Eolian deposits derived from sandstone
Slope: 1 to 3 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 3.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 40 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Sandy Saltdesert
Potential native vegetation: shadscale saltbush, Indian ricegrass, sand dropseed, bottlebrush squirreltail, fourwing saltbush, galleta, green Mormon tea, scarlet globemallow
Land capability subclass (irrigated): 4s
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 6 inches: fine sandy loam
6 to 23 inches: fine sandy loam
23 to 29 inches: fine sandy loam
29 inches: sandstone

Minor Components
Mack and similar soils
Composition: About 10 percent
Landform: Structural benches, mesas
Distinguishing characteristics: Very deep to bedrock
Farb and similar soils

Composition: About 5 percent
Landform: Structural benches, mesas
Distinguishing characteristics: Shallow to bedrock
Rock outcrop
Composition: About 5 percent
Landform: Structural benches, mesas

Major Uses

Livestock grazing

14—Bluechief fine sandy loam, 3 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Bluechief and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Bluechief soils
Landform: Mesas, Structural benches
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 3.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 40 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Sandy Saltdesert
Potential native vegetation: shadscale saltbush, Indian ricegrass, sand dropseed, bottlebrush squirreltail, fourwing saltbush, galleta, green Mormon tea, scarlet globemallow
Land capability subclass (irrigated): 4s
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 6 inches: fine sandy loam
6 to 23 inches: fine sandy loam
23 to 29 inches: fine sandy loam
29 inches: sandstone

Minor Components
Mack and similar soils
Composition: About 10 percent
Landform: Structural benches, mesas
Distinguishing characteristics: Very deep to bedrock
Rock outcrop
Composition: About 5 percent
Landform: Structural benches, mesas
Farb and similar soils
Composition: About 5 percent
Landform: Structural benches, mesas
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

15—Bluechief-Rock outcrop complex, 1 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Bluechief and similar soils: 75 percent
Rock outcrop: 15 percent
Minor components: 10 percent

Component Descriptions

Bluechief soils
Landform: Mesas, structural benches
Parent material: Eolian deposits derived from sandstone
Slope: 1 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 3.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 40 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Sandy Salt Desert
Potential native vegetation: shadscale saltbush, Indian ricegrass, sand dropseed, bottlebrush squirreltail, fourwing saltbush, galleta, green Mormon tea, scarlet globemallow

Land capability subclass (irrigated): 4e
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 6 inches: fine sandy loam
6 to 23 inches: fine sandy loam
23 to 29 inches: fine sandy loam
29 inches: sandstone

Rock outcrop
Landform: Mesas, structural benches
Parent material: Sandstone
Slope: 1 to 12 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Mack and similar soils
Composition: About 5 percent
Landform: Structural benches, mesas
Distinguishing characteristics: Very deep to bedrock
Farb and similar soils
Composition: About 5 percent
Landform: Structural benches, mesas
Distinguishing characteristics: shallow to bedrock

Major Uses

Livestock grazing

16—Cahona-Pulpit complex, 3 to 9 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,800 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Cahona and similar soils: 50 percent
Pulpit and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Cahona soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 9 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 11.2 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)

Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 50 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 4 (slightly sodic)
Ecological site: Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, antelope bitterbrush, bottlebrush squirreltail, needleandthread, true mountainmahogany, green Mormon tea
Land capability subclass (irrigated): 4e
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 7 inches: silt loam
7 to 30 inches: silty clay loam
30 to 45 inches: silty clay loam
45 to 60 inches: loam

Pulpit soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 9 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 4.3 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, antelope bitterbrush, bottlebrush squirreltail, needleandthread, true mountainmahogany, green Mormon tea
Land capability subclass (irrigated): 4e
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 3 inches: silt loam
3 to 10 inches: silt loam
10 to 24 inches: silt loam
24 inches: sandstone

Minor Components
Wetherill and similar soils
Composition: About 10 percent
Landform: Mesas
Distinguishing characteristics: Deeper to calcium carbonate concentrations
Gladel and similar soils

Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

17—Cahona-Zigzag complex, 5 to 45 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Cahona and similar soils: 35 percent
Zigzag and similar soils: 35 percent
Minor components: 25 percent

Component Descriptions

Cahona soils
Landform: Fan remnants
Parent material: Reworked eolian deposits derived from mixed sources
Slope: 5 to 15 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.001 to 0.06 in/hr (very slow)
Available water capacity: About 7.4 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 4 (slightly sodic)
Ecological site: Southwest Mountain Pinyon-Juniper
Potential native vegetation: Utah juniper, twoneedle pinyon, muttongrass, Indian ricegrass, Wyoming big sagebrush, mountainmahogany, Gambel oak, bottlebrush squirreltail, Utah serviceberry, antelope bitterbrush, mountain snowberry, yucca
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 2 inches: gravelly loam
2 to 36 inches: clay loam
36 to 60 inches: cobbly loam

Zigzag soils
Landform: Hills
Parent material: Residuum weathered from shale

Slope: 10 to 45 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 3.1 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Southwest Mountain Pinyon-Juniper
Potential native vegetation: Utah juniper, twoneedle pinyon, muttongrass, Indian ricegrass, Wyoming big sagebrush, mountainmahogany, Gambel oak, bottlebrush squirreltail, Utah serviceberry, antelope bitterbrush, mountain snowberry, yucca
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 3 inches: clay loam
3 inches to 13 inches: clay loam
13 inches: shale

Minor Components
Wetherill and similar soils
Composition: About 10 percent
Landform: Fan remnants
Distinguishing characteristics: Fewer coarse fragments
Sharps and similar soils
Composition: About 5 percent
Landform: Fan remnants
Distinguishing characteristics: Moderately deep to bedrock
Wetoe and similar soils
Composition: About 5 percent
Landform: Fan remnants
Distinguishing characteristics: More coarse fragments
Badlands and similar soils
Composition: About 5 percent
Landform: Hills

18—Camac-Kimbeto-Badland association, 0 to 50 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Camac and similar soils: 35 percent
Kimbeto and similar soils: 35 percent
Badland: 15 percent
Minor components: 15 percent

Component Descriptions

Camac soils
Landform: Terraces
Parent material: Alluvium derived from mixed sources over residuum weathered from shale and siltstone
Slope: 15 to 50 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 4.1 inches (low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: galleta, shadscale saltbush, Indian ricegrass, bottlebrush squirreltail, saline wildrye, alkali sacaton
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 3 inches: very cobbly fine sandy loam
3 to 16 inches: gravelly loam
16 to 34 inches: clay loam
34 inches: shale

Kimbeto soils
Landform: Plateaus, structural benches
Parent material: Alluvium and eolian deposits and residuum weathered from sandstone
Slope: 0 to 5 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 4.4 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 30 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 30 (strongly sodic)

Ecological site: Alkali Flat
Potential native vegetation: Indian ricegrass, galleta, shadscale saltbush, bottlebrush squirreltail, fourwing saltbush
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: fine sandy loam
2 to 10 inches: loam
10 to 54 inches: loam, fine sandy loam
54 to 66 inches: cobbly sandy clay loam

Badland
Landform: Knobs
Parent material: Shale
Slope: 8 to 20 percent
Depth to restrictive feature: 0 to 3 inches to bedrock (paralithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Blackston and similar soils
Composition: About 5 percent
Landform: Terraces
Distinguishing characteristics: More rock fragments
Benally and similar soils
Composition: About 5 percent
Landform: Terraces
Distinguishing characteristics: High amounts of sodium
Hoskay and similar soils
Composition: About 5 percent
Landform: Terraces
Distinguishing characteristics: Clayey textures

Major Uses

Livestock grazing

19—Chimrock loam, sodic, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Chimrock, sodic and similar soils: 75 percent
Minor components: 25 percent

Component Descriptions

Chimrock, sodic soils
Landform: Alluvial flats
Parent material: Slope alluvium derived from sandstone and shale
Slope: 1 to 3 percent

Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 30 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 30 (strongly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, Gardner's saltbush, Indian ricegrass, winterfat, fourwing saltbush, scarlet globemallow
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 5 inches: loam
5 to 17 inches: loam
17 to 68 inches: clay loam
68 to 80 inches: clay loam

Minor Components

Uzona and similar soils
Composition: About 10 percent
Landform: Alluvial flats
Distinguishing characteristics: Clayey textures

Gypsey and similar soils
Composition: About 10 percent
Landform: Alluvial flats
Distinguishing characteristics: High amounts of gypsum

Persayo and similar soils
Composition: About 5 percent
Landform: Hillslopes
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

20—Chimrock very fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Chimrock and similar soils: 75 percent
Minor components: 25 percent

Component Descriptions

Chimrock soils
Landform: Fan piedmonts
Parent material: Slope alluvium derived from sandstone and shale
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 8.7 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, Indian ricegrass, bottlebrush squirreltail, winterfat, fourwing saltbush, scarlet globemallow
Land capability subclass (irrigated): 2e
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 15 inches: very fine sandy loam
15 to 32 inches: loam
32 to 80 inches: sandy loam

Minor Components
Gypsey and similar soils
Composition: About 10 percent
Landform: Fan piedmonts
Distinguishing characteristics: High amounts of gypsum
Hope and similar soils
Composition: About 10 percent
Landform: Fan piedmonts
Distinguishing characteristics: High amounts of calcium carbonate and gypsum
Persayo and similar soils
Composition: About 5 percent
Landform: Hillslopes
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

21—Clayspring-Badland complex, 35 to 60 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet

Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Claysprings and similar soils: 60 percent
Badland: 30 percent
Minor components: 10 percent

Component Descriptions

Claysprings soils
Landform: Structural benches, buttes, hills, cuestas
Parent material: Residuum weathered from shale
Slope: 35 to 60 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.0 to 0.001 in/hr (impermeable)
Available water capacity: About 1.3 inches (very low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 30 (strongly sodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: galleta, green Mormon tea, shadscale saltbush, Indian ricegrass, alkali sacaton, saline wildrye, bottlebrush squirreltail
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: extremely gravelly sandy clay loam
2 to 4 inches: clay
4 to 12 inches: clay
12 inches: shale

Badland
Landform: Hills
Parent material: Shale
Slope: 8 to 15 percent
Depth to restrictive feature: 0 to 3 inches to bedrock (paralithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Rock outcrop
Composition: About 5 percent
Landform: Hills
Tohona and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: Deep to bedrock

Major Uses

Livestock grazing

22—Claysprings very stony clay loam, 12 to 65 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Claysprings and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Claysprings soils
Landform: Knobs
Parent material: Residuum weathered from shale
Slope: 12 to 65 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 2.9 inches (very low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 20 (moderately sodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: galleta, shadscale saltbush, saline wildrye, alkali sacaton, Indian ricegrass, Utah juniper, Wyoming big sagebrush, bottlebrush squirreltail, fourwing saltbush
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 3 inches: very stony clay loam
3 to 18 inches: clay
18 inches: shale

Minor Components
Zwicker and similar soils
Composition: About 10 percent
Landform: Drainageways
Distinguishing characteristics: Moderately deep to bedrock
Uzona and similar soils
Composition: About 5 percent
Landform: Knobs
Distinguishing characteristics: Very deep to bedrock
Badlands
Composition: About 5 percent

Landform: Drainageways
Distinguishing characteristics: Lack of soil development

Major Uses

Livestock grazing

23—Cowboy clay, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Cowboy and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Cowboy soils
Landform: Drainageways, flood plains
Parent material: Alluvium derived from shale
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 8.9 inches (moderate)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: Very Rare
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 15 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 3 (slightly sodic)
Ecological site: Alkali Bottom
Potential native vegetation: alkali sacaton, greasewood, Gardner's saltbush, bottlebrush squirreltail, fourwing saltbush, galleta, shadscale saltbush, western wheatgrass, scarlet globemallow
Land capability subclass (irrigated): 3s
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 9 inches: clay
9 to 80 inches: stratified silty clay to clay

Minor Components
Battlerock and similar soils
Composition: About 10 percent
Landform: Drainageways, flood plains
Distinguishing characteristics: Loamy textures
Ravola and similar soils

Composition: About 5 percent
Landform: Drainageways, flood plains
Distinguishing characteristics: Silty textures

Major Uses

Livestock grazing

24—Cowboy-Kava complex, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Cowboy and similar soils: 50 percent
Kava and similar soils: 30 percent
Minor components: 15 percent

Component Descriptions

Cowboy soils
Landform: Fan piedmonts
Parent material: Slope alluvium derived from shale
Slope: 1 to 3 percent
Depth to restrictive feature: 60 to 80 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 9.4 inches (high)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 15 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 25 (moderately sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, Gardner's saltbush, Indian ricegrass, bottlebrush squirreltail
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 5 inches: silty clay
5 to 61 inches: clay
61 inches: shale

Kava soils
Landform: Fan piedmonts, knobs
Parent material: Residuum weathered from shale
Slope: 1 to 3 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)

Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 2.4 inches (very low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, Gardner's saltbush, Indian ricegrass, bottlebrush squirreltail, mat saltbush
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 2 inches: silty clay loam
2 to 5 inches: clay
5 to 15 inches: clay
15 inches: shale

Minor Components
Badlands
Composition: About 10 percent
Landform: Hills
Oagamati and similar soils
Composition: About 5 percent
Landform: Fan piedmonts
Distinguishing characteristics: Moderately deep to bedrock

Major Uses

Livestock grazing

25—Cowboy-Kava complex, 3 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Cowboy and similar soils: 50 percent
Kava and similar soils: 30 percent
Minor components: 20 percent

Component Descriptions

Cowboy soils
Landform: Fan piedmonts
Parent material: Slope alluvium derived from shale
Slope: 3 to 12 percent

Depth to restrictive feature: 60 to 80 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 9.4 inches (high)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 15 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 25 (moderately sodic)
Ecological site: Clayey Saltdesert
Potential native vegetation: Gardner's saltbush, galleta, shadscale saltbush, Indian ricegrass, alkali sacaton, bottlebrush squirreltail, mat saltbush, mound saltbush
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 5 inches: silty clay
5 to 61 inches: clay
61 inches: shale

Kava soils
Landform: Fan piedmonts, knobs
Parent material: Residuum weathered from shale
Slope: 3 to 12 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 2.4 inches (very low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Clayey Saltdesert
Potential native vegetation: Gardner's saltbush, galleta, shadscale saltbush, Indian ricegrass, alkali sacaton, bottlebrush squirreltail, mat saltbush, mound saltbush
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 2 inches: silty clay loam
2 to 5 inches: clay
5 to 15 inches: clay
15 inches: shale

Minor Components
Badlands
Composition: About 10 percent
Landform: Hills
Oagamati and similar soils
Composition: About 10 percent

Landform: Fan piedmonts
Distinguishing characteristics: Moderately deep to bedrock

Major Uses

Livestock grazing

26—Decorock-Salamander association, 1 to 50 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Decorock and similar soils: 55 percent
Salamander and similar soils: 30 percent
Minor components: 15 percent

Component Descriptions

Decorock soils
Landform: Paleoterraces
Position on landform: Riser
Parent material: Reworked alluvium derived from mixed sources over shale
Slope: 20 to 50 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 4.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 20 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: galleta, shadscale saltbush, alkali sacaton, Indian ricegrass, bottlebrush squirreltail, winterfat
Land capability subclass (nonirrigated): 6e

Typical Profile:
0 to 5 inches: very gravelly clay loam
5 to 10 inches: gravelly clay loam
10 to 15 inches: gravelly clay
15 to 26 inches: gravelly clay
26 to 58 inches: extremely cobbly clay loam
58 inches: shale

Salamander soils
Landform: Paleoterraces
Position on landform: Tread
Parent material: Eolian deposits over alluvium derived from mixed sources
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 4.4 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 60 percent
Gypsum maximum: About 40 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 3 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, Indian ricegrass, fourwing saltbush, winterfat, snakeweed, green Mormon tea, scarlet globemallow
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 3 inches: very fine sandy loam
3 to 10 inches: loam
10 to 27 inches: extremely gravelly loam
27 to 35 inches: extremely gravelly gypsiferous coarse sandy loam
35 to 50 inches: very gravelly gypsiferous sandy loam
50 to 80 inches: extremely gravelly gypsiferous fine sandy loam

Minor Components
Mack and similar soils
Composition: About 5 percent
Landform: Paleoterraces
Distinguishing characteristics: Lack of rock fragments
Persayo and similar soils
Composition: About 5 percent
Landform: Paleoterraces
Distinguishing characteristics: Shallow to bedrock
Yogovuci and similar soils
Composition: About 5 percent
Landform: Paleoterraces
Distinguishing characteristics: Less calcium carbonate and gypsum

Major Uses

Livestock grazing

27—Decorock-Salamander-Badlands association, 3 to 60 percent slopes

Map Unit Setting

Major Land Resource Area: 35

Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Decorock and similar soils: 60 percent
Salamander and similar soils: 20 percent
Badlands: 10 percent
Minor components: 10 percent

Component Descriptions

Decorock soils
Landform: Paleoterraces
Position on landform: Riser
Parent material: Alluvium derived from mixed sources over residuum weathered from shale
Slope: 20 to 50 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 4.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 20 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: galleta, alkali sacaton, shadscale saltbush, Indian ricegrass, bottlebrush squirreltail, winterfat
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 5 inches: very gravelly clay loam
5 to 10 inches: gravelly clay loam
10 to 15 inches: gravelly clay loam
15 to 26 inches: gravelly clay
26 to 58 inches: extremely cobbly clay loam
58 inches: shale

Salamander soils
Landform: Paleoterraces
Position on landform: Tread
Parent material: Eolian deposits over alluvium derived from mixed sources
Slope: 3 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 4.4 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None

Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 60 percent
Gypsum maximum: About 40 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, Indian ricegrass, fourwing saltbush, winterfat, snakeweed, green Mormon tea, scarlet globemallow
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 3 inches: very fine sandy loam
3 to 10 inches: loam
10 to 27 inches: extremely gravelly loam
27 to 35 inches: extremely gravelly gypsiferous coarse sandy loam
35 to 50 inches: very gravelly gypsiferous sandy loam
50 to 80 inches: extremely gravelly gypsiferous fine sandy loam

Badlands
Landform: Hills, knobs
Parent material: Shale
Slope: 20 to 60 percent
Depth to restrictive feature: 0 to 1 inches to bedrock (paralithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Yogovuci and similar soils
Composition: About 5 percent
Landform: Paleoterraces
Distinguishing characteristics: Fewer rock fragments
Persayo and similar soils
Composition: About 5 percent
Landform: Paleoterraces
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

28—Dolcan-Kucu association, 3 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Dolcan and similar soils: 50 percent
Kucu and similar soils: 30 percent
Minor components: 20 percent

Component Descriptions

Dolcan soils
Landform: Paleoterraces
Parent material: Residuum weathered from sandstone and shale
Slope: 9 to 25 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 1.4 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: Twoneedle pinyon, Utah juniper, mountainmahogany, galleta, Utah serviceberry, Indian ricegrass, common snowberry, muttongrass, western wheatgrass
Land capability subclass (nonirrigated): 6e

Typical Profile:
0 to 3 inches: very gravelly loam
3 to 6 inches: gravelly loam
6 to 10 inches: loam
10 inches: shale

Kucu soils
Landform: Paleoterraces
Parent material: Eolian deposits over old alluvium derived from mixed sources
Slope: 3 to 9 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 4.8 inches (low)
Shrink-swell potential: About 1.0 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 70 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 6 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Shallow Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: muttongrass, Indian ricegrass, Utah juniper, twoneedle pinyon, antelope bitterbrush, bottlebrush squirreltail, needleandthread, true mountainmahogany
Land capability subclass (nonirrigated): 6e

Typical Profile:
0 to 2 inches: loam

2 to 15 inches: clay loam
15 to 38 inches: very gravelly sandy loam
38 to 80 inches: extremely gravelly sandy loam

Minor Components

Wetherill and similar soils
Composition: About 10 percent
Landform: Paleoterraces
Distinguishing characteristics: Lacks lithologic discontinuity

Sideshow and similar soils
Composition: About 5 percent
Landform: Paleoterraces
Distinguishing characteristics: Clayey textures

Prater and similar soils
Composition: About 5 percent
Landform: Paleoterraces
Distinguishing characteristics: Clayey textures

Major Uses

Livestock grazing

29—Elias-Yarts complex, 1 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Elias and similar soils: 50 percent
Yarts and similar soils: 40 percent
Minor components: 10 percent

Component Descriptions

Elias soils

Landform: Flood plains
Parent material: Alluvium derived from sandstone and shale
Slope: 1 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 12 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 50 (strongly sodic)
Ecological site: Alkali Bottom

Potential native vegetation: alkali sacaton, galleta, greasewood, Indian ricegrass, bottlebrush squirreltail, fourwing saltbush, shadscale saltbush, winterfat
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 6 inches: loam
6 to 39 inches: loam
39 to 80 inches: loam

Yarts soils
Landform: Alluvial fans
Parent material: Alluvium derived from sandstone
Slope: 1 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 7.2 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Loam
Potential native vegetation: Wyoming big sagebrush, Indian ricegrass, galleta, muttongrass, New Mexico feathergrass, fourwing saltbush, winterfat, sand dropseed
Land capability subclass (nonirrigated): 4c

Typical Profile:
0 to 3 inches: fine sandy loam
3 to 11 inches: sandy loam
11 to 60 inches: sandy loam

Minor Components
Mikim and similar soils
Composition: About 5 percent
Landform: Structural benches, mesas
Distinguishing characteristics: Less sodium concentration
Romberg and similar soils
Composition: About 5 percent
Landform: Structural benches, mesas
Distinguishing characteristics: More rock fragments

Major Uses

Livestock grazing

30—Farb-Rock outcrop complex, 3 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet

Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Farb and similar soils: 55 percent
Rock outcrop: 30 percent
Minor components: 15 percent

Component Descriptions

Farb soils
Landform: Mesas
Parent material: Eolian deposits and residuum weathered from sandstone
Slope: 3 to 12 percent
Depth to restrictive feature: 5 to 20 inches to bedrock (lithic)
Drainage class: Excessively drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 1.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Shallow Desert
Potential native vegetation: Utah juniper, New Mexico feathergrass, Indian ricegrass, galleta, Wyoming big sagebrush, cliffrose, fourwing saltbush, green Mormon tea, needleandthread, pinyon
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 3 inches: sandy loam
3 to 16 inches: sandy loam
16 inches: sandstone

Rock outcrop
Landform: Mesas
Parent material: Sandstone
Slope: 3 to 12 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Mack and similar soils
Composition: About 10 percent
Landform: Mesas
Distinguishing characteristics: Very deep to bedrock
Recapture and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: High sodium amounts

Major Uses

Livestock grazing

31—Farb-Rock outcrop-Fruitland complex, 1 to 45 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Farb and similar soils: 30 percent
Rock outcrop: 25 percent
Fruitland and similar soils: 20 percent
Minor components: 25 percent

Component Descriptions

Farb soils
Landform: Hogbacks
Parent material: Residuum weathered from sandstone
Slope: 6 to 45 percent
Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)
Drainage class: Excessively drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 0.4 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 3 (slightly sodic)
Ecological site: Shallow Desert
Potential native vegetation: Utah juniper, Indian ricegrass, galleta, bottlebrush squirreltail, needleandthread, shadscale saltbush, Mormon tea, saline wildrye, skunkbush sumac
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 1 inch: very channery sandy loam
1 inch to 12 inches: channery sandy loam
12 inches: sandstone

Rock outcrop
Landform: Hogbacks
Parent material: Sandstone

Slope: 10 to 45 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Fruitland soils
Landform: Hogbacks valley
Parent material: Alluvium derived from sandstone
Slope: 1 to 9 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 7.2 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Sandy Saltdesert
Potential native vegetation: needleandthread, Indian ricegrass, sand dropseed, shadscale saltbush, Douglas rabbitbrush, bottlebrush squirreltail, galleta, winterfat
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 4 inches: fine sandy loam
4 to 60 inches: fine sandy loam

Minor Components
Cowboy and similar soils
Composition: About 10 percent
Landform: Hills
Distinguishing characteristics: More clay
Mikim and similar soils
Composition: About 10 percent
Landform: Alluvial fans
Distinguishing characteristics: Loamy textures
Kava and similar soils
Composition: About 5 percent
Landform: Structural benches, mesas
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

32—Fardraw very cobbly loam, 0 to 9 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,100 to 8,500 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F.

Freeze-free period: 80 to 100 days

Map Unit Composition

Fardraw and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Fardraw soils
Landform: Structural benches
Parent material: Old alluvium derived from mixed sources
Slope: 0 to 9 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 5.3 inches (low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Pine Grasslands
Potential native vegetation: Gambel oak, Arizona fescue, Parry oatgrass, mountain muhly, ponderosa pine, bottlebrush squirreltail, Rocky Mountain juniper
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 9 inches: very cobbly loam
9 to 13 inches: very cobbly clay loam
13 to 60 inches: very cobbly clay loam

Minor Components
Nortez and similar soils
Composition: About 10 percent
Landform: Structural benches
Distinguishing characteristics: Moderately deep to bedrock
Rock outcrop
Composition: About 5 percent
Landform: Structural benches

Major Uses

Livestock grazing

33—Farview-Beclabito-Rock outcrop complex, 1 to 10 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches

Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Farview and similar soils: 60 percent
Beclabito and similar soils: 20 percent
Rock outcrop: 10 percent
Minor components: 10 percent

Component Descriptions

Farview soils
Landform: Mesas, structural benches
Parent material: Eolian deposits and slope alluvium derived from sandstone
Slope: 1 to 10 percent
Depth to restrictive feature: 4 to 10 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 0.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 20 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Ecological site: Shallow desert
Potential native vegetation: Utah juniper, twoneedle pinyon, Indian ricegrass, saline wildrye, fourwing saltbush, needleandthread, cliffrose, galleta, shadscale saltbush, broom snakeweed, green Mormon tea
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: channery loamy sand
2 to 6 inches: channery fine sandy loam, fine sandy loam, channery sandy loam
6 inches: sandstone

Beclabito soils
Landform: Mesas, structural benches
Parent material: Alluvium and residuum weathered from sandstone and shale
Slope: 1 to 5 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 5.4 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 30 (strongly sodic)

Ecological site: Semidesert Juniper Loam
Potential native vegetation: Indian ricegrass, Utah juniper, Wyoming big sagebrush, galleta, muttongrass, twoneedle pinyon, antelope bitterbrush, bottlebrush squirreltail, needleandthread
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 4 inches: fine sandy loam
4 to 14 inches: sandy clay loam
14 to 36 inches: sandy clay loam
36 to 45 inches: sandy clay loam
45 to 56 inches: silty clay loam
56 inches: sandstone

Rock outcrop
Landform: Mesas, structural benches
Parent material: Sandstone
Slope: 1 to 40 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Strych and similar soils
Composition: About 4 percent
Landform: Mesas, structural benches
Distinguishing characteristics: Very deep to bedrock
McElmo and similar soils
Composition: About 3 percent
Landform: Mesas, structural benches
Distinguishing characteristics: Clayey textures
Eagleye and similar soils
Composition: About 3 percent
Landform: Mesas, structural benches
Distinguishing characteristics: Shallow to soft bedrock

Major Uses

Livestock grazing

34—Farview-Rock outcrop complex, 1 to 10 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Farview and similar soils: 50 percent
Rock outcrop: 35 percent
Minor components: 15 percent

Component Descriptions

Farview soils
Landform: Mesas, structural benches, cuestas
Parent material: Eolian deposits and slope alluvium derived from sandstone
Slope: 1 to 10 percent
Depth to restrictive feature: 4 to 10 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 1.0 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 20 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Ecological site: Shallow Desert
Potential native vegetation: Utah juniper, twoneedle pinyon, Indian ricegrass, saline wildrye, fourwing saltbush, needleandthread, cliffrose, galleta, shadscale saltbush, green Mormon tea, singleleaf ash
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: channery loamy sand
2 to 9 inches: fine sandy loam, channery fine sandy loam, channery sandy loam
9 inches: sandstone

Rock outcrop
Landform: Mesas, structural benches, cuestas
Parent material: Sandstone
Slope: 1 to 40 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Mido and similar soils
Composition: About 5 percent
Landform: Dunes
Distinguishing characteristics: Very deep to bedrock
Beclabito and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Deep to bedrock
Eagleye and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Shallow to soft bedrock

Major Uses

Livestock grazing

35—Fluvents-Fluvaquents complex, 0 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 4,800 to 8,500 feet
Mean annual precipitation: 7 to 20 inches
Mean annual air temperature: 43 to 56 degrees F.
Freeze-free period: 80 to 160 days

Map Unit Composition

Fluvents and similar soils: 55 percent
Fluvaquents and similar soils: 30 percent
Minor components: 15 percent

Component Descriptions

Fluvents soils
Landform: Terraces, flood plains
Parent material: Alluvium derived from mixed sources
Slope: 0 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Somewhat excessively drained
Slowest permeability: 6.0 to 20 in/hr (rapid)
Available water capacity: About 2.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Occasional
Seasonal high water table depth: None
Runoff class: Negligible
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: River Bottom
Potential native vegetation: alkali sacaton, western wheatgrass, cottonwood
Land capability subclass (nonirrigated): 6w

Typical Profile:
0 to 6 inches: variable
6 to 60 inches: stratified very gravelly sand to loamy sand

Fluvaquents soils
Landform: Flood plains
Parent material: Alluvium derived from mixed sources
Slope: 0 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Poorly drained
Slowest permeability: 6.0 to 20 in/hr (rapid)
Available water capacity: About 4.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Frequent
Seasonal high water table depth: About 12 to 36 inches

Runoff class: Very low
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: River Bottom
Potential native vegetation: western wheatgrass, alkali sacaton, inland saltgrass, needleandthread, rush, sedge, willow, narrowleaf cottonwood
Land capability subclass (nonirrigated): 6w

Typical Profile:
0 to 8 inches: variable
8 to 60 inches: stratified very gravelly sand to sandy loam

Minor Components
Ramper and similar soils
Composition: About 10 percent
Landform: Flood plains
Distinguishing characteristics: Lack of water table
Ackmen and similar soils
Composition: About 5 percent
Landform: Flood plains
Distinguishing characteristics: Darker surface layers

Major Uses

Livestock grazing

36—Gladel-Pulpit complex, 3 to 9 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Gladel and similar soils: 45 percent
Pulpit and similar soils: 35 percent
Minor components: 20 percent

Component Descriptions

Gladel soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 9 percent
Depth to restrictive feature: 12 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 1.5 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None

Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Shallow Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, antelope bitterbrush, bottlebrush squirreltail, needleandthread, true mountainmahogany
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 3 inches: fine sandy loam
3 to 11 inches: sandy loam
11 to 18 inches: sandy loam
18 inches: sandstone

Pulpit soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 9 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 4.3 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, antelope bitterbrush, bottlebrush squirreltail, needleandthread, true mountainmahogany
Land capability subclass (irrigated): 4e
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 3 inches: silt loam
3 to 10 inches: silt loam
10 to 24 inches: silt loam
24 inches: sandstone

Minor Components
Rock outcrop
Composition: About 10 percent
Landform: Mesas
Wetherill and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Very deep to bedrock
Dolcan and similar soils

Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Shallow to soft bedrock

Major Uses

Livestock grazing

37—Greycap-Nomad complex, 1 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Greycap and similar soils: 40 percent
Nomad and similar soils: 40 percent
Minor components: 20 percent

Component Descriptions

Greycap soils
Landform: Structural benches
Parent material: Residuum weathered from limestone
Slope: 1 to 6 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 1.0 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 65 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Basin Shale
Potential native vegetation: galleta, black sagebrush, western wheatgrass, Indian ricegrass, bottlebrush squirreltail, shadscale saltbush, winterfat, dwarf rabbitbrush
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 2 inches: loam
2 to 6 inches: clay loam
6 inches: shale

Nomad soils
Landform: Structural benches
Parent material: Eolian deposits over residuum weathered from limestone
Slope: 1 to 6 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 4.2 inches (low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 60 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, bottlebrush squirreltail, shadscale saltbush, winterfat, Indian ricegrass, snakeweed, scarlet globemallow
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 2 inches: loamy sand
2 to 14 inches: loam
14 to 21 inches: clay loam
21 to 30 inches: clay
30 inches: shale

Minor Components
Rock outcrop
Composition: About 10 percent
Landform: Structural benches
Nataani and similar soils
Composition: About 10 percent
Landform: Structural benches
Distinguishing characteristics: Higher gypsum contents

Major Uses

Livestock grazing

38—Gypsey sandy clay loam, 3 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Gypsey and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Gypsey soils
Landform: Hills, pediments

Parent material: Residuum weathered from shale
Slope: 3 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 35 percent
Gypsum maximum: About 35 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 3 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, bottlebrush squirreltail, shadscale saltbush, Indian ricegrass, snakeweed, winterfat, scarlet globemallow
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 3 inches: sandy clay loam
3 to 9 inches: clay loam
9 to 28 inches: gypsiferous loam
28 inches: shale

Minor Components
Persayo and similar soils
Composition: About 10 percent
Landform: Pediments, hills
Distinguishing characteristics: Lacks soil development
Hope and similar soils
Composition: About 5 percent
Landform: Pediments, hills
Distinguishing characteristics: Higher calcium carbonate amounts
Chimrock and similar soils
Composition: About 5 percent
Landform: Pediments, hills
Distinguishing characteristics: Very deep to bedrock

Major Uses

Livestock grazing

39—Gypsey sandy clay loam, 6 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches

Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Gypsey and similar soils: 75 percent
Minor components: 25 percent

Component Descriptions

Gypsey soils
Landform: Hills, pediments
Parent material: Residuum weathered from shale
Slope: 6 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 35 percent
Gypsum maximum: About 35 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 3 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, bottlebrush squirreltail, shadscale saltbush, Indian ricegrass, snakeweed, winterfat, scarlet globemallow
Land capability subclass (irrigated): 4e
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 3 inches: sandy clay loam
3 to 9 inches: clay loam
9 to 28 inches: gypsiferous loam
28 inches: shale

Minor Components
Hope and similar soils
Composition: About 10 percent
Landform: Pediments, hills
Distinguishing characteristics: Higher calcium carbonate amounts
Persayo and similar soils
Composition: About 10 percent
Landform: Pediments, hills
Flooding hazard: None
Distinguishing characteristics: Lacks soil development
Chimrock and similar soils
Composition: About 5 percent
Landform: Pediments, hills
Distinguishing characteristics: Very deep to bedrock

Major Uses

Livestock grazing

40—Herm loam, 3 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,100 to 8,500 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F.
Freeze-free period: 80 to 100 days

Map Unit Composition

Herm and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Herm soils
Landform: Landslides, mountains
Parent material: Slope alluvium derived from shale
Slope: 3 to 25 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 14.8 inches (very high)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Brushy Loam
Potential native vegetation: Gambel oak, Utah juniper, Utah serviceberry, twoneedle pinyon, Letterman needlegrass, common chokecherry, common snowberry, muttongrass, Rocky Mountain maple, kinnikinnick
Land capability subclass (nonirrigated): 6e

Typical Profile:
0 to 12 inches: loam
12 to 15 inches: clay loam
15 to 73 inches: clay loam

Minor Components
Kwiavu and similar soils
Composition: About 5 percent
Landform: Mountains
Distinguishing characteristics: Loamy textures
Towaoc and similar soils
Composition: About 3 percent
Landform: Mountains

Distinguishing characteristics: More rock fragments
Wetherill and similar soils
Composition: About 2 percent
Landform: Mountains
Distinguishing characteristics: Loamy textures

41—Hope silty clay loam, 1 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Hope and similar soils: 75 percent
Minor components: 25 percent

Component Descriptions

Hope soils
Landform: Alluvial flats
Parent material: Slope alluvium derived from shale
Slope: 1 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 35 percent
Gypsum maximum: About 25 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 3 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, Gardner's saltbush, Indian ricegrass, bottlebrush squirreltail, fourwing saltbush, needleandthread
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 3 inches: silty clay loam
3 to 10 inches: silty clay loam
10 to 80 inches: silt loam

Minor Components
Persayo and similar soils
Composition: About 10 percent
Landform: Hillslopes
Distinguishing characteristics: Shallow to bedrock

Chimrock and similar soils
Composition: About 10 percent
Landform: Alluvial flats
Distinguishing characteristics: Less calcium carbonate and sodium
Gypsey and similar soils
Composition: About 5 percent
Landform: Alluvial flats
Distinguishing characteristics: High gypsum amounts

Major Uses

Livestock grazing

42—Hoskay-Patel-Badland complex, 1 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Hoskay and similar soils: 40 percent
Patel and similar soils: 30 percent
Badland: 15 percent
Minor components: 15 percent

Component Descriptions

Hoskay soils
Landform: Fan terraces
Parent material: Alluvium derived from mixed sources
Slope: 1 to 10 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 5.2 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 25 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 30 (strongly sodic)
Ecological site: Alkali Flat
Potential native vegetation: galleta, Indian ricegrass, shadscale saltbush, Gardner's saltbush, alkali sacaton, bottlebrush squirreltail
Land capability subclass (nonirrigated): 7c

Typical Profile:
0 to 2 inches: channery loam

2 to 6 inches: clay loam
6 to 14 inches: clay
14 to 27 inches: gypsiferous clay loam
27 to 65 inches: stratified channery sandy clay loam to silty clay

Patel soils
Landform: Cuestas, structural benches
Parent material: Alluvium derived from sandstone and siltstone
Slope: 5 to 25 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 3.9 inches (low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 20 percent
Gypsum maximum: About 15 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 30 (strongly sodic)
Ecological site: Silty Salt Desert
Potential native vegetation: galleta, Indian ricegrass, shadscale saltbush, Gardner's saltbush, alkali sacaton, bottlebrush squirreltail
Land capability subclass (nonirrigated): 7c

Typical Profile:
0 to 2 inches: channery silty clay loam
2 to 12 inches: clay
12 to 16 inches: silty clay loam
16 to 33 inches: silty clay loam
33 inches: shale

Badland
Landform: Hills
Parent material: Shale
Slope: 8 to 40 percent
Depth to restrictive feature: 0 to 3 inches to bedrock (paralithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Chipeta and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: Depth to bedrock
Notal and similar soils
Composition: About 5 percent
Landform: Terraces
Distinguishing characteristics: Lacks sodium concentration
Nageezi and similar soils
Composition: About 5 percent
Landform: Terraces
Distinguishing characteristics: Sandy textures

Major Uses

Livestock grazing

43—Ives sandy loam, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Ives and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Ives soils
Landform: Flood plains, drainageways
Parent material: Alluvium derived from mixed sources
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Very Rare
Seasonal high water table depth: None
Runoff class: Very low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 3 (slightly sodic)
Ecological site: Alkali Bottom
Potential native vegetation: alkali sacaton, greasewood, Indian ricegrass, fourwing saltbush, galleta, shadscale saltbush, scarlet globemallow
Land capability subclass (irrigated): 3s
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 1 inch: sandy loam
1 inch to 80 inches: stratified loamy sand to sandy loam

Minor Components
Tupuyci and similar soils
Composition: About 5 percent
Landform: Drainageways, flood plains
Distinguishing characteristics: More rock fragments
Ravola and similar soils
Composition: About 5 percent
Landform: Drainageways, flood plains
Distinguishing characteristics: Silty textures
Battlerock and similar soils
Composition: About 5 percent
Landform: Drainageways, flood plains
Distinguishing characteristics: Loamy textures

Major Uses

Livestock grazing

44—Jeddito-Escavada association, 0 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Jeddito and similar soils: 70 percent
Escavada and similar soils: 15 percent
Minor components: 15 percent

Component Descriptions

Jeddito soils
Landform: Terraces
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 5.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 25 (moderately sodic)
Ecological site: Alkali Bottom
Potential native vegetation: alkali sacaton, inland saltgrass, bottlebrush squirreltail, galleta, greasewood
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 7c

Typical Profile:
0 to 9 inches: loamy fine sand
9 to 27 inches: loamy very fine sand, loamy fine sand
27 to 68 inches: stratified fine sand to silty clay loam

Escavada soils
Landform: Flood plains
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 1 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)

Available water capacity: About 4.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Occasional
Seasonal high water table depth: About 60 to 72 inches
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Alkali Bottom
Potential native vegetation: alkali sacaton, inland saltgrass, galleta, black greasewood, bottlebrush squirreltail
Land capability subclass (nonirrigated): 6e

Typical Profile:
0 to 4 inches: very fine sandy loam
4 to 70 inches: stratified fine sand to silty clay

Minor Components
Riverwash
Composition: About 10 percent
Landform: Drainageways
Hamburn and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Frequently flooded

Major Uses

Livestock grazing

45—Jeddito loamy fine sand, 0 to 2 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Jeddito and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Jeddito soils
Landform: Terraces
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 2 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 6.4 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)

Flooding hazard: Rare
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Alkali Bottom
Potential native vegetation: alkali sacaton, sand dropseed, fourwing saltbush, galleta, greasewood, inland saltgrass
Land capability subclass (nonirrigated): 7c

Typical Profile:
0 to 5 inches: loamy fine sand
5 to 16 inches: loamy fine sand, loamy sand
16 to 70 inches: stratified loamy sand to clay loam

Minor Components
Tewa and similar soils
Composition: About 5 percent
Landform: Fan terraces
Distinguishing characteristics: Clayey textures
Hamburn and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Frequently flooded
Escavada and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Frequently flooded

Major Uses

Livestock grazing

46—Juanalo gravely fine sandy loam, 1 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Juanalo and similar soils: 75 percent
Minor components: 25 percent

Component Descriptions

Juanalo soils
Landform: Mesas, structural benches

Parent material: Residuum weathered from limestone
Slope: 1 to 6 percent
Depth to restrictive feature: 5 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 1.5 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 70 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 2 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: New Mexico feathergrass, alkali sacaton, galleta, bottlebrush squirreltail, Indian ricegrass, fourwing saltbush, green Mormon tea, needleandthread, shadscale saltbush, sand dropseed
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 1 inch: gravelly fine sandy loam
1 inch to 3 inches: loam
3 to 9 inches: loam
9 to 11 inches: very channery loam
11 inches: Juana Lopez Limestone

Minor Components

Persayo and similar soils
Composition: About 10 percent
Landform: Structural benches, mesas
Distinguishing characteristics: Shallow to soft bedrock

Gypsey and similar soils
Composition: About 10 percent
Landform: Structural benches, mesas
Distinguishing characteristics: Higher gypsum amounts

Rock outcrop
Composition: About 5 percent
Landform: Structural benches, mesas

Major Uses

Livestock grazing

47—Katzine very gravelly fine sandy loam, 15 to 45 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches

Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Katzine and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Katzine soils
Landform: Mountains
Parent material: Colluvium and slope alluvium derived from diorite
Slope: 15 to 45 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 3.1 inches (low)
Shrink-swell potential: About 1.0 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Southwest Mountain Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, Indian ricegrass, muttongrass, Wyoming big sagebrush, bottlebrush squirreltail, cliffrose, galleta, antelope bitterbrush
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: very gravelly fine sandy loam
2 to 7 inches: very gravelly loam
7 to 80 inches: very gravelly sandy loam

Minor Components
Cahona and similar soils
Composition: About 10 percent
Landform: Fan Remnants
Distinguishing characteristics: Fewer rock fragments
Pulpit and similar soils
Composition: About 5 percent
Landform: Fan remnants
Distinguishing characteristics: Depth to bedrock
Awitava and similar soils
Composition: About 5 percent
Landform: Fan remnants
Distinguishing characteristics: Petrocalcic material

Major Uses

Livestock grazing

48—Lazear-Rock outcrop complex, 12 to 65 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Lazear and similar soils: 50 percent
Rock outcrop: 30 percent
Minor components: 20 percent

Component Descriptions

Lazear soils
Landform: Mesas
Parent material: Residuum weathered from sandstone and shale
Slope: 12 to 40 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 1.5 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Shallow Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, saline wildrye, Indian ricegrass, muttongrass, Wyoming big sagebrush, antelope bitterbrush, cliffrose, true mountainmahogany
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 5 inches: very stony loam
5 to 15 inches: loam
15 inches: sandstone

Rock outcrop
Landform: Mesas
Parent material: Sandstone
Slope: 12 to 65 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Dolcan and similar soils
Composition: About 10 percent
Landform: Mesas

Distinguishing characteristics: Shallow to soft bedrock
Pulpit and similar soils
Composition: About 10 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to bedrock

Major Uses

Livestock grazing

49—Lillings silty clay loam, 3 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Lillings and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Lillings soils
Landform: Flood plains
Parent material: Alluvium derived from shale
Slope: 3 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.1 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Alkali Bottom
Potential native vegetation: alkali sacaton, greasewood, western wheatgrass, basin big sagebrush, galleta, fourwing saltbush
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 2 inches: silty clay loam
2 to 60 inches: stratified silt loam to silty clay loam

Minor Components
Sideshow and similar soils
Composition: About 5 percent
Landform: Terraces

Distinguishing characteristics: Clayey textures
Mikim and similar soils
Composition: About 2 percent
Landform: Alluvial fans
Distinguishing characteristics: Loamy textures
Zyme and similar soils
Composition: About 2 percent
Landform: Knobs
Distinguishing characteristics: Shallow to bedrock
Ramper and similar soils
Composition: About 1 percent
Landform: Alluvial fans
Distinguishing characteristics: Loamy textures

Major Uses

Livestock grazing

50—Littlehat-Persayo-Badland complex, 3 to 45 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Littlehat and similar soils: 35 percent
Persayo and similar soils: 35 percent
Badland: 15 percent
Minor components: 15 percent

Component Descriptions

Littlehat soils
Landform: Plateaus
Parent material: Alluvium and residuum weathered from shale and siltstone
Slope: 3 to 45 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 2.6 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 20 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 35 mmhos/cm (strongly saline)
Sodium adsorption ratio maximum: About 100 (strongly sodic)
Ecological site: Clayey Saltdesert

Potential native vegetation: mat saltbush, Indian ricegrass, alkali sacaton, bottlebrush squirreltail, galleta, shadscale saltbush
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: silt loam
2 to 36 inches: silt loam
36 inches: shale

Persayo soils
Landform: Plateau
Parent material: Alluvium and residuum weathered from shale and siltstone
Slope: 3 to 15 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 2.2 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Silty Saltdesert
Potential native vegetation: Indian ricegrass, galleta, Gardner's saltbush, bud sagebrush, shadscale
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: silt loam
2 to 6 inches: silt loam
6 to 18 inches: silty clay loam
18 inches: shale

Badland
Landform: Plateau
Parent material: Shale
Slope: 8 to 10 percent
Depth to restrictive feature: 0 to 3 inches to bedrock (paralithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Tocito and similar soils
Composition: About 10 percent
Landform: Fan terraces
Distinguishing characteristics: Very deep to bedrock
Ravola and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Occasional flooding

Major Uses

Livestock grazing

51—Littlehat-Persayo-Nataani complex, 1 to 15 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Littlehat and similar soils: 35 percent
Persayo and similar soils: 30 percent
Nataani and similar soils: 20 percent
Minor components: 15 percent

Component Descriptions

Littlehat soils
Landform: Plateaus
Parent material: Residuum and slope alluvium derived from shale and siltstone
Slope: 1 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 2.2 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 20 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 35 mmhos/cm (strongly saline)
Sodium adsorption ratio maximum: About 100 (strongly sodic)
Ecological site: Clayey Saltdesert
Potential native vegetation: mat saltbush, Indian ricegrass, alkali sacaton, bottlebrush squirreltail, galleta, shadscale saltbush
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: silt loam
2 to 31 inches: silt loam
31 inches: shale

Persayo soils
Landform: Cuestas, structural benches
Parent material: Residuum and slope alluvium derived from shale and siltstone
Slope: 1 to 5 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None

Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Silty Saltdesert
Potential native vegetation: galleta, Indian ricegrass, Gardner's saltbush, bud sagebrush, shadscale saltbush
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: very fine sandy loam
2 to 6 inches: silt loam
6 to 17 inches: silty clay loam
17 inches: shale

Nataani soils
Landform: Plateaus
Parent material: Residuum and slope alluvium derived from shale and siltstone
Slope: 1 to 5 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 3.9 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 45 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Alkali Flat
Potential native vegetation: galleta, Gardner's saltbush, Indian ricegrass, shadscale, alkali sacaton, bottlebrush squirreltail
Land capability subclass (nonirrigated): 7c

Typical Profile:
0 to 3 inches: very fine sandy loam
3 to 9 inches: very fine sandy loam
9 to 21 inches: gypsiferous sandy loam
21 to 30 inches: silt loam
30 inches: shale

Minor Components
Tsebitai and similar soils
Composition: About 5 percent
Landform: Fan terraces
Distinguishing characteristics: Very deep to bedrock
Ravola and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Occasional flooding
Gyptur and similar soils

Composition: About 5 percent
Landform: Structural benches
Distinguishing characteristics: Deep to bedrock

Major Uses

Livestock grazing

52—Littlewater-Rubble land-Rock outcrop complex, 25 to 90 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,100 to 8,500 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F.
Freeze-free period: 80 to 100 days

Map Unit Composition

Littlewater: 35 percent
Rubbleland: 30 percent
Rock outcrop: 15 percent
Minor components: 10 percent

Component Descriptions

Littlewater
Landform: Mountains
Parent material: Colluvium and slope alluvium derived from diorite
Slope: 25 to 90 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 4.1 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Douglas-fir, Gambel oak, muttongrass
Potential native vegetation: Douglas-fir, Gambel oak, Utah serviceberry, Letterman needlegrass, common chokecherry, common snowberry, mountain brome, Rocky Mountain maple, kinnikinnick
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 1 inch: slightly decomposed plant material
1 inch to 7 inches: very gravelly silt loam
7 to 20 inches: very gravelly loam
20 to 31 inches: very gravelly loam
31 to 80 inches: very gravelly loam

Rubbleland
Landform: Mountains
Parent material: Diorite
Slope: 25 to 90 percent
Surface fragments: 100 percent
Land capability subclass (nonirrigated): 8s

Rock outcrop
Landform: Mountains
Parent material: Diorite
Slope: 25 to 90 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Towaoc and similar soils
Composition: About 10 percent
Landform: Mountain slopes
Distinguishing characteristics: Lack of leached horizon

Major Uses

Livestock grazing

53—Longburn-Rock outcrop complex, 10 to 45 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,800 to 7,800 feet
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F.
Freeze-free period: 130 to 150 days

Map Unit Composition

Longburn and similar soils: 65 percent
Rock outcrop: 20 percent
Minor components: 15 percent

Component Descriptions

Longburn soils
Landform: Mesas
Parent material: Eolian deposits and residuum weathered from sandstone
Slope: 10 to 45 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 1.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None

Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Shallow Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, Utah serviceberry, antelope bitterbrush, cliff fendlerbush, true mountainmahogany
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 1 inch: cobbly fine sandy loam
1 inch to 4 inches: very cobbly fine sandy loam
4 to 17 inches: very cobbly clay loam
17 inches: sandstone

Rock outcrop
Landform: Mesas
Parent material: Sandstone
Slope: 10 to 45 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Roubideau and similar soils
Composition: About 10 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to bedrock
Dolcan and similar soils
Composition: About 4 percent
Landform: Mesas
Distinguishing characteristics: Shallow to soft bedrock
Wauquie and similar soils
Composition: About 1 percent
Landform: Mesas
Distinguishing characteristics: Very deep to bedrock

Major Uses

Livestock grazing

54—Longburn-Rock outcrop complex, 45 to 80 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,800 to 7,800 feet
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F.
Freeze-free period: 130 to 150 days

Map Unit Composition

Longburn and similar soils: 50 percent
Rock outcrop: 30 percent
Minor components: 15 percent

Component Descriptions

Longburn soils
Landform: Edge mesas
Parent material: Eolian deposits and residuum weathered from sandstone
Slope: 45 to 80 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 1.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Shallow Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, Utah serviceberry, antelope bitterbrush, cliff fendlerbush, true mountainmahogany
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 1 inch: cobbly fine sandy loam
1 inch to 4 inches: very cobbly fine sandy loam
4 to 17 inches: very cobbly clay loam
17 inches: sandstone

Rock outcrop
Landform: Edge mesas
Parent material: Sandstone
Slope: 45 to 80 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Stephouse and similar soils
Composition: About 10 percent
Landform: Mesas
Distinguishing characteristics: High concentrations of calcium carbonate
Dolcan and similar soils
Composition: About 4 percent
Landform: Mesas
Distinguishing characteristics: Shallow to soft bedrock
Wauquie and similar soils
Composition: About 1 percent
Landform: Mesas
Distinguishing characteristics: Very deep to bedrock

Major Uses

Livestock grazing

55—Mack fine sandy loam, 0 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Mack and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Mack soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 0 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 9.2 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, Indian ricegrass, greasewood, fourwing saltbush, scarlet globemallow, shadscale saltbush
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 13 inches: fine sandy loam
13 to 33 inches: sandy clay loam
33 to 60 inches: sandy clay loam

Minor Components
Farb and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Shallow to bedrock
Rock outcrop
Composition: About 5 percent
Landform: Mesas
Sheppard and similar soils
Composition: About 3 percent
Landform: Dunes
Distinguishing characteristics: Sandy textures
Uzacol and similar soils

Composition: About 2 percent
Landform: Mesas
Distinguishing characteristics: Clayey textures

Major Uses

Livestock grazing

56—Mack fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Mack and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Mack soils
Landform: Structural benches, mesas
Parent material: Eolian deposits derived from sandstone
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 9.2 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 40 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 15 (moderately sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, Indian ricegrass, bottlebrush squirreltail, sand dropseed, fourwing saltbush, snakeweed
Land capability subclass (irrigated): 2e
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 4 inches: fine sandy loam
4 to 14 inches: fine sandy loam
14 to 43 inches: loam
43 to 56 inches: loam
56 to 80 inches: loam

Minor Components
Mariano and similar soils

Composition: About 10 percent
Landform: Structural benches, mesas
Distinguishing characteristics: More rock fragments
Bluechief and similar soils
Composition: About 10 percent
Landform: Structural benches, mesas
Distinguishing characteristics: Moderately deep to bedrock

Major Uses

Livestock grazing

57—Mack fine sandy loam, 3 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Mack and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Mack soils
Landform: Mesas, structural benches
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 9.2 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 40 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 15 (moderately sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, Indian ricegrass, bottlebrush squirreltail, sand dropseed, fourwing saltbush, snakeweed
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 4 inches: fine sandy loam
4 to 14 inches: fine sandy loam
14 to 43 inches: loam

43 to 56 inches: loam
56 to 80 inches: loam

Minor Components

Bluechief and similar soils
Composition: About 10 percent
Landform: Structural benches, mesas
Distinguishing characteristics: Moderately deep to bedrock

Mariano and similar soils
Composition: About 10 percent
Landform: Structural benches, mesas
Distinguishing characteristics: More rock fragments

Major Uses

Livestock grazing

58—Mariano very fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Mariano and similar soils: 75 percent
Minor components: 25 percent

Component Descriptions

Mariano soils

Landform: Fan remnants
Parent material: Eolian deposits over alluvium derived from igneous rock
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 3.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very low
Calcium carbonate maximum: About 75 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 25 (moderately sodic)
Ecological site: Sandy Saltdesert
Potential native vegetation: shadscale saltbush, Indian ricegrass, sand dropseed, bottlebrush squirreltail, fourwing saltbush, galleta, green Mormon tea, scarlet globemallow
Land capability subclass (irrigated): 4s

Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 11 inches: very fine sandy loam
11 to 29 inches: extremely gravelly coarse sandy loam
29 to 51 inches: extremely gravelly sandy loam
51 to 80 inches: extremely cobbly sandy loam

Minor Components
Mack and similar soils
Composition: About 15 percent
Landform: Fan remnants
Distinguishing characteristics: Fewer rock fragments
Yogovuci and similar soils
Composition: About 5 percent
Landform: Fan remnants
Distinguishing characteristics: Higher gypsum amounts
Taqoci and similar soils
Composition: About 5 percent
Landform: Fan remnants
Distinguishing characteristics: Higher sodium amounts

Major Uses

Livestock grazing

59—Mariano very fine sandy loam, 3 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Mariano and similar soils: 75 percent
Minor components: 25 percent

Component Descriptions

Mariano soils
Landform: Fan remnants
Parent material: Eolian deposits over alluvium derived from igneous rock
Slope: 3 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 3.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very low
Calcium carbonate maximum: About 75 percent
Gypsum maximum: About 10 percent

Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 25 (moderately sodic)
Ecological site: Sandy Saltdesert
Potential native vegetation: shadscale saltbush, Indian ricegrass, sand dropseed, bottlebrush squirreltail, fourwing saltbush, galleta, green Mormon tea, scarlet globemallow
Land capability subclass (irrigated): 4s
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 11 inches: very fine sandy loam
11 to 29 inches: extremely gravelly coarse sandy loam
29 to 51 inches: extremely gravelly sandy loam
51 to 80 inches: extremely cobbly sandy loam

Minor Components
Mack and similar soils
Composition: About 15 percent
Landform: Fan remnants
Distinguishing characteristics: Fewer rock fragments
Yogovuci and similar soils
Composition: About 5 percent
Landform: Fan remnants
Distinguishing characteristics: Higher gypsum amounts
Taqoci and similar soils
Composition: About 5 percent
Landform: Fan remnants
Distinguishing characteristics: Higher sodium amounts

Major Uses

Livestock grazing

60—Mariano very fine sandy loam, 3 to 6 percent slopes, stony

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Mariano, stony and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Mariano, stony soils
Landform: Fan remnants
Parent material: Eolian deposits over alluvium derived from igneous rock
Slope: 3 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained

Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 3.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very low
Calcium carbonate maximum: About 75 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 25 (moderately sodic)
Ecological site: Sandy Saltdesert
Potential native vegetation: shadscale saltbush, Indian ricegrass, sand dropseed, bottlebrush squirreltail, fourwing saltbush, galleta, green Mormon tea, scarlet globemallow
Land capability subclass (irrigated): 4s
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 11 inches: very fine sandy loam
11 to 29 inches: extremely gravelly coarse sandy loam
29 to 51 inches: extremely gravelly sandy loam
51 to 80 inches: extremely cobbly sandy loam

Minor Components
Mack and similar soils
Composition: About 10 percent
Landform: Fan remnants
Distinguishing characteristics: Fewer rock fragments
Taqoci and similar soils
Composition: About 5 percent
Landform: Fan remnants
Distinguishing characteristics: Higher amounts of sodium
Yogovuci and similar soils
Composition: About 5 percent
Landform: Fan remnants
Distinguishing characteristics: Higher amounts of gypsum

Major Uses

Livestock grazing

61—Mikett clay loam, saline-sodic, 0 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Mikett and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Mikett soils
Landform: Alluvial fans, drainageways
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Somewhat poorly drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 7.4 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: About 12 to 36 inches
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 20 (moderately sodic)
Ecological site: Salt Meadow
Potential native vegetation: alkali sacaton, inland saltgrass, sedge, western wheatgrass, Baltic rush, greasewood, rubber rabbitbrush
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 8 inches: clay loam
8 to 60 inches: clay loam

Minor Components
Mikim and similar soils
Composition: About 5 percent
Landform: Alluvial fans
Distinguishing characteristics: Absence of water table
Ramper and similar soils
Composition: About 5 percent
Landform: Alluvial fans
Distinguishing characteristics: Absence of water table
Sideshow and similar soils
Composition: About 3 percent
Landform: Alluvial fans
Distinguishing characteristics: Clayey textures and absence of water table
Zigzag and similar soils
Composition: About 2 percent
Landform: Hills
Distinguishing characteristics: Shallow to bedrock and absence of water table

Major Uses

Livestock grazing

62—Mikett clay loam, 0 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet

Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Frost-free period: 120 to 135 days

Map Unit Composition

Mikett and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Mikett soils
Landform: Alluvial fans and drainageways
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Somewhat poorly drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 9.4 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: About 36 to 60 inches
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 15 (moderately sodic)
Ecological site: Salt Meadow
Potential native vegetation: alkali sacaton, inland saltgrass, rush, sedge, western wheatgrass, fourwing saltbush, greasewood, rabbitbrush
Land capability subclass (irrigated): 4s
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 8 inches: clay loam
8 to 60 inches: clay loam

Minor Components
Aquents and similar soils
Composition: About 10 percent
Landform: Alluvial fans
Distinguishing characteristics: Shallower water table
Ackmen and similar soils
Composition: About 3 percent
Landform: Alluvial fans
Distinguishing characteristics: Absence of water table
Sideshow and similar soils
Composition: About 2 percent
Landform: Alluvial fans
Distinguishing characteristics: Clayey textures and absence of water table

Major Uses

Livestock grazing

63—Mikim clay loam, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Mikim and similar soils: 90 percent
Minor components: 15 percent

Component Descriptions

Mikim soils
Landform: Alluvial fans
Parent material: Alluvium derived from sandstone and shale
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.7 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Alkali Flat
Potential native vegetation: Alkali sacaton, galleta, western wheatgrass, big sagebrush, fourwing saltbush
Land capability subclass (irrigated): 4s
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 3 inches: clay loam
3 to 15 inches: clay loam
15 to 32 inches: stratified fine sandy loam to clay loam
32 to 60 inches: clay loam

Minor Components
Mikett and similar soils
Composition: About 5 percent
Landform: Alluvial fans
Distinguishing characteristics: Presence of a water table
Zigzag and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: Shallow to bedrock

Sideshow and similar soils
Composition: About 5 percent
Landform: Alluvial fans
Distinguishing characteristics: Clayey textures

Major Uses

Livestock grazing

64—Mikim loam, 3 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Mikim and similar soils: 90 percent
Minor components: 15 percent

Component Descriptions

Mikim soils
Landform: Alluvial fans
Parent material: Alluvium derived from sandstone and shale
Slope: 3 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.6 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, western wheatgrass, big sagebrush, fourwing saltbush
Land capability subclass (irrigated): 4s
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 3 inches: loam
3 to 15 inches: clay loam
15 to 32 inches: stratified fine sandy loam to clay loam
32 to 60 inches: clay loam

Minor Components
Mikett and similar soils

Composition: About 5 percent
Landform: Alluvial fans
Distinguishing characteristics: Presence of a water table

Zigzag and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: Shallow to bedrock

Sideshow and similar soils
Composition: About 5 percent
Landform: Alluvial fans
Distinguishing characteristics: Clayey textures

Major Uses

Livestock grazing

65—Monierco fine sandy loam, 3 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Monierco and similar soils: 75 percent
Minor components: 25 percent

Component Descriptions

Monierco soils
Landform: Cuesta valleys
Position on landform: Backslopes
Parent material: Residuum weathered from shale and siltstone
Slope: 3 to 12 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: galleta, shadscale saltbush, alkali sacaton, Indian ricegrass, saline wildrye, bottlebrush squirreltail, needleandthread, winterfat, green Mormon tea, Utah juniper
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 2 inches: fine sandy loam
2 to 7 inches: loam
7 to 18 inches: channery loam
18 inches: shale

Minor Components
Picliff and similar soils
Composition: About 15 percent
Landform: Cuesta valley
Distinguishing characteristics: More gypsum
Rock outcrop
Composition: About 10 percent
Landform: Hogbacks

Major Uses

Livestock grazing

66—Morefield loam, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,800 to 7,800 feet
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F.
Freeze-free period: 130 to 150 days

Map Unit Composition

Morefield and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Morefield soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.8 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Wyoming big sagebrush, Indian ricegrass, antelope bitterbrush, true mountainmahogany, yucca
Land capability subclass (nonirrigated): 3c

Typical Profile:
0 to 2 inches: loam
2 to 24 inches: clay loam
24 to 60 inches: clay loam

Minor Components
Stephouse and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Shallow to bedrock and calcium carbonate concentrations
Arabrab and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

67—Morefield loam, 3 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,800 to 7,800 feet
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F.
Freeze-free period: 130 to 150 days

Map Unit Composition

Morefield and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Morefield soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.8 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Wyoming big sagebrush, Indian ricegrass, antelope bitterbrush, true mountainmahogany, yucca

Land capability subclass (nonirrigated): 3e

Typical Profile:
0 to 2 inches: loam
2 to 24 inches: clay loam
24 to 60 inches: clay loam

Minor Components
Arabrab and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Depth to bedrock
Stephouse and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Depth to bedrock and calcium carbonate concentration

Major Uses

Livestock grazing

68—Nataani-Yogovuci complex, 3 to 9 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Nataani and similar soils: 60 percent
Yogovuci and similar soils: 20 percent
Minor components: 20 percent

Component Descriptions

Nataani soils
Landform: Structural benches
Parent material: Slope alluvium and residuum weathered from sandstone and shale
Slope: 3 to 9 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 4.9 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 25 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)

Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, bottlebrush squirreltail, Indian ricegrass, fourwing saltbush, shadscale saltbush, needleandthread, sand dropseed, Wyoming big sagebrush
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 10 inches: fine sandy loam
10 to 23 inches: sandy loam
23 to 37 inches: gypsiferous sandy loam
37 to 39 inches: gypsiferous sandy loam
39 inches: sandstone

Yogovuci soils
Landform: Structural benches
Parent material: Eolian deposits over alluvium derived from mixed sources
Slope: 3 to 9 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 8.9 inches (moderate)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 20 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, bottlebrush squirreltail, Indian ricegrass, fourwing saltbush, shadscale saltbush, needleandthread, sand dropseed, Wyoming big sagebrush
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 2 inches: very fine sandy loam
2 to 6 inches: loam
6 to 13 inches: clay loam
13 to 35 inches: clay loam
35 to 75 inches: stratified loamy sand to sandy loam to loam to clay loam to clay
75 to 80 inches: extremely gravelly loamy sand

Minor Components
Benally and similar soils
Composition: About 10 percent
Landform: Structural benches
Distinguishing characteristics: Higher sodium amounts
Chimrock and similar soils
Composition: About 5 percent
Landform: Structural benches
Distinguishing characteristics: Lack of lithologic discontinuity
Farb and similar soils
Composition: About 5 percent
Landform: Structural benches

Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

69—Oagamati silty clay loam, 1 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Oagamati and similar soils: 70 percent
Minor components: 30 percent

Component Descriptions

Oagamati soils
Landform: Pediments
Parent material: Residuum weathered from shale
Slope: 1 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 5.3 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 20 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 40 (strongly sodic)
Ecological site: Clayey Saltdesert
Potential native vegetation: Gardner's saltbush, shadscale saltbush, galleta, Indian ricegrass, alkali sacaton, bottlebrush squirreltail, mat saltbush
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 1 inch: silty clay loam
1 inch to 5 inches: clay
5 to 23 inches: clay
23 to 35 inches: very parachannery clay
35 inches: shale

Minor Components
Kava and similar soils
Composition: About 10 percent
Landform: Pediments
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)

Distinguishing characteristics: Shallow to bedrock
Uzona and similar soils
Composition: About 10 percent
Landform: Pediments
Distinguishing characteristics: Higher salt amounts
Cowboy and similar soils
Composition: About 10 percent
Landform: Pediments
Distinguishing characteristics: Lower sodium amounts

Major Uses

Livestock grazing

70—Pagayvay extremely gravelly coarse sandy loam, 1 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Pagayvay and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Pagayvay soils
Landform: Flood plains, flood-plain steps
Parent material: Alluvium derived from diorite
Slope: 1 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 1.8 inches (very low)
Shrink-swell potential: About 0.0 percent (low)
Flooding hazard: Rare
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Southwest Mountain Pinyon-Juniper
Potential native vegetation: Utah juniper, twoneedle pinyon, Wyoming big sagebrush, muttongrass, Indian ricegrass, cliffrose, galleta, needleandthread, bottlebrush squirreltail, skyrocket gilia
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 1 inch: extremely gravelly coarse sandy loam

1 inch to 60 inches: stratified very stony loamy coarse sand to extremely cobbly coarse sandy loam to extremely gravelly sandy loam

Minor Components

Ives and similar soils
Composition: About 5 percent
Landform: Flood plains
Distinguishing characteristics: Fewer rock fragments

Katzine and similar soils
Composition: About 5 percent
Landform: Mountains
Distinguishing characteristics: Calcium carbonate concentrations

71—Persayo-Cairn-Patel complex, 1 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Persayo and similar soils: 35 percent
Cairn and similar soils: 30 percent
Patel and similar soils: 25 percent
Minor components: 10 percent

Component Descriptions

Persayo soils

Landform: Cuestas, structural benches
Parent material: Residuum weathered from shale and siltstone
Slope: 1 to 15 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 2.0 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Silty Saltdesert
Potential native vegetation: galleta, shadscale saltbush, Indian ricegrass, Gardner's saltbush, bottlebrush squirreltail
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: loam

2 to 17 inches: clay loam, silty clay loam
17 to 27 inches: bedrock

Cairn soils
Landform: Cuestas, structural benches
Parent material: Residuum weathered from limestone and sandstone
Slope: 1 to 5 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 3.3 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 70 percent
Gypsum maximum: About 50 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Alkali Flat
Potential native vegetation: galleta, Indian ricegrass, shadscale, Gardner's saltbush, bottlebrush squirreltail
Land capability subclass (nonirrigated): 7c

Typical Profile:
0 to 2 inches: channery fine sandy loam
2 to 9 inches: loam, clay loam
9 to 19 inches: very channery loam
19 to 46 inches: gravelly gypsiferous sandy loam
46 inches: soft sandstone and shale

Patel soils
Landform: Cuestas, structural benches
Parent material: Residuum and slope alluvium derived from shale and siltstone
Slope: 5 to 25 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 4.1 inches (low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 20 percent
Gypsum maximum: About 15 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 30 (strongly sodic)
Ecological site: Silty Saltdesert
Potential native vegetation: galleta, shadscale, Indian ricegrass, Gardner's saltbush, bottlebrush squirreltail
Land capability subclass (nonirrigated): 7c

Typical Profile:
0 to 1 inch: very channery loam
1 inch to 8 inches: clay

8 to 24 inches: silty clay loam
24 to 37 inches: silty clay loam
37 inches: shale

Minor Components

Genats and similar soils
Composition: About 3 percent
Landform: Cuestas, structural benches
Distinguishing characteristics: Clayey textures
Littlehat and similar soils
Composition: About 3 percent
Landform: Cuestas, structural benches
Distinguishing characteristics: High amounts of sodium
Nageezi and similar soils
Composition: About 2 percent
Landform: Cuestas, structural benches
Distinguishing characteristics: Sandy textures
Brimhall and similar soils
Composition: About 2 percent
Landform: Cuestas, structural benches
Distinguishing characteristics: Sandy textures

Major Uses

Livestock grazing

72—Persayo gravelly loam, 12 to 45 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Persayo and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Persayo soils

Landform: Pediments, hills
Parent material: Residuum and slope alluvium weathered from shale
Slope: 12 to 45 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 30 percent
Gypsum maximum: About 10 percent

Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: galleta, alkali sacaton, shadscale saltbush, Indian ricegrass, bottlebrush squirreltail, winterfat
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: gravelly silty clay loam
2 to 11 inches: silty clay loam
11 inches: shale

Minor Components
Chimrock and similar soils
Composition: About 5 percent
Landform: Pediments
Distinguishing characteristics: Very deep to bedrock
Hope and similar soils
Composition: About 5 percent
Landform: Pediments
Distinguishing characteristics: Very deep to bedrock
Decorock and similar soils
Composition: About 5 percent
Landform: Paleoterraces
Distinguishing characteristics: More rock fragments

Major Uses

Livestock grazing

73—Persayo silty clay loam, 3 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Persayo and similar soils: 75 percent
Minor components: 25 percent

Component Descriptions

Persayo soils
Landform: Hills, pediments
Parent material: Residuum and slope alluvium derived from shale and siltstone
Slope: 3 to 12 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None

Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 30 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Clayey Saltdesert
Potential native vegetation: Gardner's saltbush, shadscale saltbush, galleta, Indian ricegrass, alkali sacaton, bottlebrush squirreltail, mat saltbush
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 2 inches: silty clay loam
2 to 11 inches: silty clay loam
11 inches: shale

Minor Components
Gypsey and similar soils
Composition: About 10 percent
Landform: Hills, pediments
Distinguishing characteristics: High gypsum content
Hope and similar soils
Composition: About 10 percent
Landform: Hills, pediments
Distinguishing characteristics: Very deep to bedrock
Chimrock and similar soils
Composition: About 5 percent
Landform: Hills, pediments
Distinguishing characteristics: Very deep to bedrock

Major Uses

Livestock grazing

74—Persayo-Yogovuci association, 1 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Persayo and similar soils: 50 percent
Yogovuci and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Persayo soils
Landform: Paleoterraces
Position on landform: Riser
Parent material: Residuum weathered from shale

Slope: 3 to 12 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 30 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, Indian ricegrass, bottlebrush squirreltail, winterfat, needleandthread, sand dropseed
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 2 inches: silty clay loam
2 to 11 inches: silty clay loam
11 inches: shale

Yogovuci soils
Landform: Paleoterraces
Position on landform: Tread
Parent material: Eolian deposits over alluvium derived from mixed sources
Slope: 1 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 9.1 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 45 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, Indian ricegrass, bottlebrush squirreltail, fourwing saltbush, sand dropseed
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 3 inches: loam
3 to 12 inches: loam
12 to 17 inches: clay loam
17 to 22 inches: clay loam
22 to 63 inches: stratified sandy loam to gravelly sandy loam to loam to gravelly loam
63 to 80 inches: stratified gravelly sandy clay loam to gravelly clay loam

Minor Components

Chimrock and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Fewer rock fragments
Gypsey and similar soils
Composition: About 5 percent
Landform: Paleoterraces
Distinguishing characteristics: Moderately deep to bedrock
Hope and similar soils
Composition: About 5 percent
Landform: Paleoterraces
Distinguishing characteristics: High amounts of calcium carbonate and gypsum

Major Uses

Livestock grazing

75—Picliff silty clay loam, 3 to 9 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Picliff and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Picliff soils

Landform: Cuesta valleys
Parent material: Residuum weathered from shale and siltstone
Slope: 3 to 9 percent
Depth to restrictive feature: 7 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 1.5 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 20 percent
Salinity maximum: About 6 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, bottlebrush squirreltail, fourwing saltbush, basin big sagebrush, winterfat
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 2 inches: silty clay loam
2 to 6 inches: parachannery silty clay loam
6 to 15 inches: extremely parachannery gypsiferous clay loam
15 inches: shale

Minor Components
Monerico and similar soils
Composition: About 10 percent
Landform: Cuesta valley
Distinguishing characteristics: Less gypsum
Rock outcrop
Composition: About 10 percent
Landform: Hogbacks

Major Uses

Livestock grazing

76—Pogo loam, 0 to 2 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Pogo and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Pogo soils
Landform: Drainageways
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 2 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Poorly drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 8.9 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Frequent
Seasonal high water table depth: About 0 to 18 inches
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Wet Meadow
Potential native vegetation: broadleaf cattail, sedge, rush, inland saltgrass
Land capability subclass (nonirrigated): 6w

Typical Profile:
0 to 2 inches: loam
2 to 60 inches: stratified fine sandy loam to clay loam

Minor Components
Ackmen and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Absence of a water table
Wetherill and similar soils
Composition: About 3 percent
Landform: Hills
Distinguishing characteristics: Absence of a water table
Sideshow and similar soils
Composition: About 2 percent
Landform: Drainageways
Distinguishing characteristics: Absence of a water table

Major Uses

Livestock grazing

77—Prater-Dolcan complex, 25 to 60 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,800 to 7,800 feet
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Prater and similar soils: 60 percent
Dolcan and similar soils: 15 percent
Minor components: 15 percent

Component Descriptions

Prater soils
Landform: Canyons
Parent material: Colluvium and slope alluvium derived from shale
Slope: 25 to 60 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None

Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Steep shallow clay loam Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, saline wildrye, Indian ricegrass, Wyoming big sagebrush, muttongrass, antelope bitterbrush, cliffrose, true mountainmahogany
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 1 inch: loam
1 inch to 3 inches: clay loam
3 to 9 inches: clay loam
9 to 21 inches: clay loam
21 to 60 inches: clay

Dolcan soils
Landform: Ridges
Parent material: Residuum weathered from sandstone and shale
Slope: 25 to 60 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 1.7 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Steep shallow clay loam Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, saline wildrye, Indian ricegrass, muttongrass, Wyoming big sagebrush, antelope bitterbrush, cliffrose, true mountainmahogany
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: extremely cobbly fine sandy loam
2 to 11 inches: cobbly clay loam
11 inches: shale

Minor Components
Romberg and similar soils
Composition: About 12 percent
Landform: Canyons
Distinguishing characteristics: Loamy textures
Rock outcrop
Composition: About 3 percent
Landform: Canyons

Major Uses

Livestock grazing

78—Pulpit loam, 3 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 48 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Pulpit and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Pulpit soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 6.1 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, Wyoming big sagebrush, antelope bitterbrush, cliffrose, prairie junegrass, rabbitbrush
Land capability subclass (irrigated): 4e
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 5 inches: loam
5 to 21 inches: silty clay loam
21 to 35 inches: loam
35 inches: sandstone

Minor Components
Lazear and similar soils
Composition: About 10 percent
Landform: Mesas
Distinguishing characteristics: Shallow to bedrock
Rock outcrop
Composition: About 10 percent
Landform: Mesas

Major Uses

Livestock grazing

79—Ramper loam, 0 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Ramper and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Ramper soils
Landform: Alluvial fans
Parent material: Alluvium derived from sandstone and shale
Slope: 0 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 9.5 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy Bottom
Potential native vegetation: Western wheatgrass, basin big sagebrush, slender wheatgrass, bottlebrush squirreltail, Indian ricegrass, rubber rabbitbrush
Land capability subclass (irrigated): 3c
Land capability subclass (nonirrigated): 3c

Typical Profile:
0 to 3 inches: loam
3 to 60 inches: stratified sandy loam to clay loam

Minor Components
Ackmen and similar soils
Composition: About 5 percent
Landform: Flood plains
Distinguishing characteristics: Dark surface layers
Gullied land
Composition: About 5 percent

Landform: Drainageways, flood plains, alluvial fans

Major Uses

Livestock grazing

80—Ravola clay loam, 0 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Ravola and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Ravola soils
Landform: Flood plains
Parent material: Alluvium derived from shale
Slope: 0 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 7.6 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 50 (strongly sodic)
Ecological site: Alkali Bottom
Potential native vegetation: Alkali sacaton, greasewood, inland saltgrass, basin big sagebrush, fourwing saltbush, galleta, western wheatgrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 9 inches: clay loam
9 to 60 inches: stratified loamy sand to clay loam

Minor Components
Gullied land
Composition: About 5 percent
Landform: Flood plains
Zwicker and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: Moderately deep to bedrock
Rock outcrop

Composition: About 5 percent
Landform: Hills

Major Uses

Livestock grazing

81—Ravola silt loam, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Ravola and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Ravola soils
Landform: Drainageways, flood plains
Parent material: Alluvium derived from shale and siltstone
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.5 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: Very Rare
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 4 percent
Salinity maximum: About 6 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 3 (slightly sodic)
Ecological site: Alkali Bottom
Potential native vegetation: alkali sacaton, galleta, Gardner's saltbush, Indian ricegrass, bottlebrush squirreltail, fourwing saltbush, greasewood
Land capability subclass (irrigated): 3s
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 2 inches: silt loam
2 to 47 inches: stratified silt loam to silty clay loam
47 to 80 inches: stratified loam to silty clay loam

Minor Components
Battlerock and similar soils
Composition: About 10 percent
Landform: Drainageways, flood plains
Distinguishing characteristics: Loamy textures
Cowboy and similar soils

Composition: About 5 percent
Landform: Drainageways, flood plains
Distinguishing characteristics: Clayey textures

Major Uses

Livestock grazing

82—Ravola very fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Ravola and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Ravola soils
Landform: Alluvial fans, flood plains
Parent material: Alluvium derived from siltstone
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 9.9 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Occasional
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, bottlebrush squirreltail, green Mormon tea, shadscale saltbush, Indian ricegrass
Land capability subclass (nonirrigated): 7c

Typical Profile:
0 to 10 inches: very fine sandy loam
10 to 70 inches: stratified very fine sandy loam to loam

Minor Components
Battlerock and similar soils
Composition: About 10 percent
Landform: Flood plains
Distinguishing characteristics: Loamy textures
Ravola, flooded and similar soils
Composition: About 10 percent

Landform: Flood plains
Distinguishing characteristics: Frequently flooded

Major Uses

Livestock grazing

83—Redlands fine sandy loam, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Redlands and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Redlands soils
Landform: Structural benches, mesas
Parent material: Eolian deposits derived from sandstone
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 9.0 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 3 (slightly sodic)
Ecological site: Sandy Saltdesert
Potential native vegetation: shadscale saltbush, Indian ricegrass, sand dropseed, bottlebrush squirreltail, galleta, Mormon tea, scarlet globemallow, spiny hopsage, fourwing saltbush
Land capability subclass (irrigated): 2e
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 6 inches: fine sandy loam
6 to 22 inches: loam
22 to 41 inches: sandy loam
41 to 80 inches: loam

Minor Components
Bluechief and similar soils
Composition: About 10 percent
Landform: Structural benches, mesas

Distinguishing characteristics: Moderately deep to bedrock
Mariano and similar soils
Composition: About 5 percent
Landform: Structural benches, mesas
Distinguishing characteristics: More rock fragments

Major Uses

Livestock grazing

84—Redlands fine sandy loam, 3 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Redlands and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Redlands soils
Landform: Structural benches, mesas
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 9.0 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 3 (slightly sodic)
Ecological site: Sandy Saltdesert
Potential native vegetation: shadscale saltbush, Indian ricegrass, sand dropseed, bottlebrush squirreltail, galleta, Mormon tea, scarlet globemallow, spiny hopsage, fourwing saltbush
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 6 inches: fine sandy loam
6 to 22 inches: loam
22 to 41 inches: sandy loam
41 to 80 inches: loam

Minor Components
Mariano and similar soils
Composition: About 10 percent
Landform: Structural benches, mesas
Distinguishing characteristics: More rock fragments
Bluechief and similar soils
Composition: About 5 percent
Landform: Structural benches, mesas
Distinguishing characteristics: Moderately deep to bedrock

Major Uses

Livestock grazing

85—Rizno-Gapmesa complex, 3 to 9 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Rizno and similar soils: 45 percent
Gapmesa and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Rizno soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 9 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 1.1 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Juniper Loam
Potential native vegetation: Utah juniper, twoneedle pinyon, muttongrass, Indian ricegrass, Wyoming big sagebrush, galleta, antelope bitterbrush, bottlebrush squirreltail, needleandthread
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 2 inches: very fine sandy loam

2 to 9 inches: loam
9 inches: sandstone

Gapmesa soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 9 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 2.8 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Loam
Potential native vegetation: Utah juniper, twoneedle pinyon, muttongrass, Indian ricegrass, Utah juniper, Wyoming big sagebrush, galleta, twoneedle pinyon, antelope bitterbrush, bottlebrush squirreltail, needleandthread
Land capability subclass (irrigated): 4e
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 2 inches: very fine sandy loam
2 to 21 inches: gravelly very fine sandy loam
21 to 28 inches: gravelly sandy loam
28 inches: sandstone

Minor Components
Crosscan and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: Shallow to bedrock
Barx and similar soils
Composition: About 5 percent
Landform: Mesas, hills
Distinguishing characteristics: Very deep to bedrock
Rock outcrop
Composition: About 5 percent
Landform: Mesas

Major Uses

Livestock grazing

86—Rock outcrop

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 8,500 feet

Mean annual precipitation: 7 to 20 inches
Mean annual air temperature: 43 to 56 degrees F.
Freeze-free period: 80 to 160 days

Map Unit Composition

Rock outcrop: 95 percent
Minor components: 5 percent

Component Descriptions

Rock outcrop
Landform: Mesas
Parent material: Mixed sources
Slope: 0 to 200 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Gladel and similar soils
Composition: About 5 percent
Landform: Mesas and mountains
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

87—Rock outcrop-Farview complex, 10 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Rock outcrop: 55 percent
Farview and similar soils: 35 percent
Minor components: 10 percent

Component Descriptions

Rock outcrop
Landform: Hogbacks
Parent material: Sandstone
Slope: 10 to 25 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Farview soils
Landform: Hogbacks
Parent material: Residuum weathered from sandstone

Slope: 10 to 25 percent
Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 0.4 inches (very low)
Shrink-swell potential: About 1.0 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 3 (slightly sodic)
Ecological site: Shallow Desert
Potential native vegetation: Utah juniper, twoneedle pinyon, Indian ricegrass, saline wildrye, fourwing saltbush, needleandthread, Wyoming big sagebrush, bottlebrush squirreltail, cliffrose, galleta, green Mormon tea, shadscale saltbush, singleleaf ash
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: gravelly sandy loam
2 to 5 inches: gravelly sandy loam
5 inches: sandstone

Minor Components
Barx and similar soils
Composition: About 5 percent
Landform: Hogbacks
Slope: 10 to 25 percent
Distinguishing characteristics: Very deep to bedrock
Gapmesa and similar soils
Composition: About 5 percent
Landform: Hogbacks
Distinguishing characteristics: Moderately deep to bedrock

Major Uses

Livestock grazing

88—Romberg-Crosscan complex, 6 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Romberg and similar soils: 45 percent
Crosscan and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Romberg soils
Landform: Canyons
Parent material: Slope alluvium derived from sandstone and shale
Slope: 6 to 25 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Steep shallow clay loam Pinyon-Juniper
Potential native vegetation: Utah juniper, twoneedle pinyon, Indian ricegrass, saline wildrye, Wyoming big sagebrush, muttongrass, antelope bitterbrush, cliffrose, galleta
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: very stony loam
2 to 20 inches: very stony clay loam
20 to 60 inches: very stony clay loam

Crosscan soils
Landform: Canyons
Parent material: Residuum weathered from sandstone and shale
Slope: 6 to 25 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 1.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Steep shallow clay loam Pinyon-Juniper
Potential native vegetation: Utah juniper, twoneedle pinyon, Indian ricegrass, saline wildrye, muttongrass, Wyoming big sagebrush, cliffrose, truemountainmahogany
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: very bouldery sandy clay loam
2 to 18 inches: very gravelly clay loam
18 inches: shale

Minor Components

Rock outcrop
Composition: About 5 percent
Landform: Hills

Zigzag and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: Clayey textures

Rizno and similar soils
Composition: About 3 percent
Landform: Mesas
Distinguishing characteristics: Shallow to hard bedrock

Barx and similar soils
Composition: About 2 percent
Landform: Hills
Distinguishing characteristics: Fewer rock fragments

Major Uses

Livestock grazing

89—Romberg-Crosscan-Rock outcrop complex, 25 to 80 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Romberg and similar soils: 35 percent
Crosscan and similar soils: 30 percent
Rock outcrop: 20 percent
Minor components: 15 percent

Component Descriptions

Romberg soils

Landform: Canyons
Parent material: Colluvium and slope alluvium derived from sandstone and shale
Slope: 25 to 50 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)

Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Steep shallow clay loam Pinyon-Juniper
Potential native vegetation: Utah juniper, twoneedle pinyon, Indian ricegrass, saline wildrye, Wyoming big sagebrush, muttongrass, antelope bitterbrush, cliffrose, galleta, true mountainmahogany
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: very stony loam
2 to 20 inches: very stony clay loam
20 to 60 inches: very stony clay loam

Crosscan soils
Landform: Canyons
Parent material: Residuum weathered from sandstone and shale
Slope: 25 to 80 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 1.6 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Steep shallow clay loam Pinyon-Juniper
Potential native vegetation: Utah juniper, twoneedle pinyon, saline wildrye, Wyoming big sagebrush, Indian ricegrass, antelope bitterbrush, cliffrose, galleta, muttongrass, true mountainmahogany
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: very bouldery sandy clay loam
2 to 18 inches: very gravelly clay loam
18 inches: shale

Rock outcrop
Landform: Canyons
Parent material: Sandstone
Slope: 25 to 80 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Zigzag and similar soils
Composition: About 5 percent
Landform: Ridges
Distinguishing characteristics: Clayey textures
Torriorthents and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: Lacks soil development
Rizno and similar soils

Composition: About 3 percent
Landform: Mesas
Distinguishing characteristics: Shallow to hard bedrock

Gapmesa and similar soils
Composition: About 2 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to hard bedrock

Major Uses

Livestock grazing

90—Roubideau loam, 1 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,800 to 7,800 feet
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F.
Freeze-free period: 130 to 150 days

Map Unit Composition

Roubideau and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Roubideau soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 1 to 6 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 6.1 inches (moderate)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, muttongrass, Utah juniper, Indian ricegrass, Wyoming big sagebrush, antelope bitterbrush, bottlebrush squirreltail, true mountainmahogany, yucca
Land capability subclass (nonirrigated): 3e

Typical Profile:
0 to 6 inches: loam
6 to 36 inches: loam
36 to 38 inches: channery loam
38 inches: sandstone

Minor Components
Arabrab and similar soils
Composition: About 10 percent
Landform: Mesas
Distinguishing characteristics: Shallow to bedrock
Longburn and similar soils
Composition: About 10 percent
Landform: Mesas
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

91—Sharps loam, dry, 6 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Sharps and similar soils: 80 percent
Minor components: 15 percent

Component Descriptions

Sharps soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone over shale
Slope: 6 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Loam
Potential native vegetation: galleta, New Mexico feathergrass, Wyoming big sagebrush, Indian ricegrass, blue grama, bottlebrush squirreltail, rubber rabbitbrush, western wheatgrass
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 2 inches: loam
2 to 12 inches: clay loam

12 to 27 inches: loam
27 to 32 inches: clay loam
32 inches: shale

Minor Components
Barx and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Very deep to bedrock
Gladel and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Shallow to bedrock
Rock outcrop
Composition: About 5 percent
Landform: Mesas

92—Sharps, dry-Gapmesa complex, 6 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Sharps, dry and similar soils: 45 percent
Gapmesa and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Sharps, dry soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone over shale
Slope: 6 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Loam
Potential native vegetation: galleta, New Mexico feathergrass, Wyoming big

sagebrush, Indian ricegrass, blue grama, bottlebrush squirreltail, rubber rabbitbrush, western wheatgrass
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 2 inches: loam
2 to 12 inches: clay loam
12 to 27 inches: loam
27 to 32 inches: clay loam
32 inches: shale

Gapmesa soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 6 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 2.8 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Loam
Potential native vegetation: galleta, New Mexico feathergrass, Wyoming big sagebrush, Indian ricegrass, blue grama, bottlebrush squirreltail, rabbitbrush, western wheatgrass
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 2 inches: very fine sandy loam
2 to 21 inches: gravelly very fine sandy loam
21 to 28 inches: gravelly sandy loam
28 inches: sandstone

Minor Components
Rizno and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Shallow to bedrock
Rock outcrop
Composition: About 5 percent
Landform: Mesas
Barx and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Very deep to bedrock

Major Uses

Livestock grazing

93—Sheek-Archuleta complex, 6 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,100 to 8,500 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F.
Freeze-free period: 80 to 100 days

Map Unit Composition

Sheek and similar soils: 50 percent
Archuleta and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Sheek soils

Landform: Canyons
Parent material: Slope alluvium derived from sandstone and shale
Slope: 6 to 25 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 5.6 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Ponderosa Pine
Potential native vegetation: Ponderosa pine, Rocky Mountain juniper, Gambel oak, Arizona fescue, twoneedle pinyon, Utah serviceberry, antelope bitterbrush, common snowberry, mountain brome, mountainmahogany, mountain muhly, prairie junegrass, western wheatgrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 1 inch: moderately decomposed plant material
1 inch to 5 inches: very stony sandy loam
5 to 60 inches: very stony clay loam

Archuleta soils

Landform: Canyons
Parent material: Residuum weathered from sandstone and shale
Slope: 6 to 25 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)

Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Ponderosa Pine
Potential native vegetation: ponderosa pine, Rocky Mountain Douglas fir, Gambel oak, Arizona fescue, twoneedle pinyon, Utah serviceberry, antelope bitterbrush, common snowberry, mountain brome, mountainmahogany, mountain muhly, prairie junegrass, western wheatgrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 1 inch: slightly decomposed plant material
1 inch to 6 inches: very stony sandy loam
6 to 18 inches: stony sandy loam
18 inches: shale

Minor Components
Rock outcrop
Composition: About 5 percent
Landform: Canyons
Northrim and similar soils
Composition: About 5 percent
Landform: Canyons
Distinguishing characteristics: Fewer rock fragments
Hesperus and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Darker and deeper surface horizons

Major Uses

Livestock grazing

94—Sheek-Archuleta-Rock outcrop complex, 25 to 80 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,100 to 8,500 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F.
Freeze-free period: 80 to 100 days

Map Unit Composition

Sheek and similar soils: 35 percent

Archuleta and similar soils: 30 percent
Rock outcrop: 20 percent
Minor components: 15 percent

Component Descriptions

Sheek soils
Landform: Canyons
Parent material: Colluvium and slope alluvium derived from sandstone and shale
Slope: 25 to 80 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 5.6 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Ponderosa Pine
Potential native vegetation: ponderosa pine, Rocky Mountain juniper, Gambel oak, Arizona fescue, twoneedle pinyon, Utah serviceberry, antelope bitterbrush, common snowberry, mountain brome, mountainmahogany, mountain muhly, prairie junegrass, western wheatgrass
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 1 inch: moderately decomposed plant material
1 inch to 5 inches: very stony sandy loam
5 to 60 inches: very stony clay loam

Archuleta soils
Landform: Canyons
Parent material: Residuum weathered from sandstone and shale
Slope: 25 to 80 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Ponderosa Pine
Potential native vegetation: Ponderosa pine, Rocky Mountain Douglas fir, Gambel oak, Arizona fescue, twoneedle pinyon, Utah serviceberry, antelope bitterbrush, common snowberry, mountain brome, mountainmahogany, mountain muhly, prairie junegrass, western wheatgrass

Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 1 inch: slightly decomposed plant material
1 inch to 6 inches: very stony sandy loam
6 to 18 inches: stony sandy loam
18 inches: shale

Rock outcrop
Landform: Canyons
Parent material: Sandstone
Slope: 25 to 80 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Northerim and similar soils
Composition: About 10 percent
Landform: Canyons
Distinguishing characteristics: Fewer rock fragments
Hesperus and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Deeper and darker surface layers

Major Uses

Livestock grazing

95—Sheek-Archuleta-Rock outcrop complex, 25 to 80 percent slopes, north aspect

Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,100 to 8,500 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F.
Freeze-free period: 80 to 100 days

Map Unit Composition

Sheek and similar soils: 40 percent
Archuleta and similar soils: 25 percent
Rock outcrop: 20 percent
Minor components: 15 percent

Component Descriptions

Sheek soils
Landform: Canyons
Parent material: Slope alluvium and colluvium from sandstone and shale
Slope: 25 to 80 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)

Available water capacity: About 5.6 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Douglas-fir, Gambel Oak, Muttongrass
Potential native vegetation: Rocky Mountain Douglas fir, ponderosa pine, Gambel oak, muttongrass, Arizona fescue, Utah serviceberry, antelope bitterbrush, common snowberry, mountain brome, mountainmahogany, mountain muhly, prairie junegrass, western wheatgrass
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 1 inch: moderately decomposed plant material
1 inch to 5 inches: very stony sandy loam
5 to 60 inches: very stony clay loam

Archuleta soils
Landform: Canyons
Parent material: Residuum weathered from sandstone and shale
Slope: 25 to 80 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Douglas-fir, Gambel Oak, Muttongrass
Potential native vegetation: Douglas fir, ponderosa pine, Gambel oak, muttongrass, Arizona fescue, Parry oatgrass, Utah serviceberry, antelope bitterbrush, common snowberry, mountain brome, mountainmahogany, mountain muhly, prairie junegrass, western wheatgrass
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 1 inch: slightly decomposed plant material
1 inch to 6 inches: very stony sandy loam
6 to 18 inches: stony sandy loam
18 inches: shale

Rock outcrop
Landform: Canyons
Parent material: Sandstone
Slope: 25 to 80 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Land capability subclass (nonirrigated): 8s

Minor Components
Northerim and similar soils
Composition: About 10 percent
Landform: Canyons
Distinguishing characteristics: Fewer rock fragments
Hesperus and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Deeper and darker surface layers

Major Uses

Livestock grazing

96—Sheppard fine sand, 1 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Sheppard and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Sheppard soils
Landform: Dunes
Parent material: Eolian deposits derived from sandstone
Slope: 1 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Somewhat excessively drained
Slowest permeability: 6.0 to 20 in/hr (rapid)
Available water capacity: About 4.1 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Negligible
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Desert Sand
Potential native vegetation: sand dropseed, Indian ricegrass, alkali sacaton, fourwing saltbush, galleta, green Mormon tea
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 7 inches: fine sand
7 to 60 inches: loamy sand

Minor Components
Mack and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: Loamy textures
Recapture and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: High amounts of sodium
Major Uses
Livestock grazing

97—Sideshow silty clay loam, 0 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Sideshow and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Sideshow soils
Landform: Terraces
Parent material: Alluvium derived from shale
Slope: 0 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 11.2 inches (high)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Alkalai Bottom
Potential native vegetation: galleta, Wyoming big sagebrush, needleandthread, Indian ricegrass, blue grama, bottlebrush squirreltail, rubber rabbitbrush, western wheatgrass
Land capability subclass (irrigated): 3s
Land capability subclass (nonirrigated): 3s

Typical Profile:
0 to 3 inches: silty clay loam
3 to 60 inches: clay

Minor Components

Zigzag and similar soils
Composition: About 5 percent
Landform: Knobs
Distinguishing characteristics: Shallow to bedrock

Mikim and similar soils
Composition: About 3 percent
Landform: Drainageways
Distinguishing characteristics: Loamy textures

Gullied land
Composition: About 2 percent
Landform: Terraces

Major Uses

Livestock grazing

98—Sideshow silty clay loam, 3 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Sideshow and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Sideshow soils

Landform: Alluvial fans
Parent material: Alluvium derived from shale
Slope: 3 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 11.2 inches (high)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Clayey Foothills
Potential native vegetation: galleta, New Mexico feathergrass, Wyoming big sagebrush, Indian ricegrass, western wheatgrass, blue grama, bottlebrush squirreltail, rubber rabbitbrush
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 3e

Typical Profile:
0 to 3 inches: silty clay loam
3 to 60 inches: clay

Minor Components
Ramper and similar soils
Composition: About 5 percent
Landform: Alluvial fans
Distinguishing characteristics: Loamy textures
Zigzag and similar soils
Composition: About 3 percent
Landform: Knobs
Distinguishing characteristics: Shallow to bedrock
Sideslide and similar soils
Composition: About 2 percent
Landform: Alluvial fans
Distinguishing characteristics: Presence of a water table

Major Uses

Livestock grazing

99—Simpatico loam, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Simpatico and similar soils: 70 percent
Minor components: 30 percent

Component Descriptions

Simpatico soils
Landform: Drainageways
Parent material: Alluvium derived from sandstone
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.3 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy Foothill

Potential native vegetation: Western wheatgrass, muttongrass, Indian ricegrass, basin big sagebrush, blue grama, needleandthread, prairie junegrass
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 3c

Typical Profile:
0 to 12 inches: loam
12 to 45 inches: silty clay loam
45 to 60 inches: very cobbly loam

Minor Components
Falfa and similar soils
Composition: About 15 percent
Landform: Mesa
Distinguishing characteristics: Higher clay content
Other soils and similar soils
Composition: About 15 percent
Landform: Mesa

Major Uses

Livestock grazing

100—Snapill very fine sandy loam, 1 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Freeze-free period: 120 to 135 days

Map Unit Composition

Snapill and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Snapill soils
Landform: Mesas, plateaus
Parent material: Slope alluvium and eolian deposits derived from sandstone and siltstone
Slope: 1 to 6 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 7.6 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 8 mmhos/cm (slightly saline)

Sodium adsorption ratio maximum: About 30 (strongly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, shadscale saltbush, Indian ricegrass, bottlebrush squirreltail, fourwing saltbush, sand dropseed
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 3 inches: very fine sandy loam
3 to 13 inches: loam
13 to 38 inches: loam
38 to 53 inches: loam
53 inches: shale

Minor Components
Farview and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Very shallow to bedrock
Mido and similar soils
Composition: About 5 percent
Landform: Dunes
Distinguishing characteristics: Sandy textures
Beclabito and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Moderately saline-sodic

Major Uses

Livestock grazing

101—Stephouse-Rock outcrop complex, 3 to 10 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,800 to 7,800 feet
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F.
Freeze-free period: 130 to 150 days

Map Unit Composition

Stephouse and similar soils: 55 percent
Rock outcrop: 25 percent
Minor components: 10 percent

Component Descriptions

Stephouse soils
Landform: Mesas
Parent material: Residuum weathered from sandstone and shale
Slope: 3 to 10 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (lithic)
Drainage class: Well drained

Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 1.0 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Shallow Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, Utah serviceberry, antelope bitterbrush, bottlebrush squirreltail, true mountainmahogany
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 1 inch: gravelly fine sandy loam
1 inch to 12 inches: gravelly fine sandy loam
12 inches: sandstone

Rock outcrop
Landform: Mesas
Parent material: Sandstone
Slope: 3 to 10 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Roubideau and similar soils
Composition: About 10 percent
Landform: Mesas
Slope: 3 to 10 percent
Distinguishing characteristics: Moderately deep to bedrock

Major Uses

Livestock grazing

102—Strych-Eagleye-Rock outcrop complex, 15 to 70 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Strych and similar soils: 50 percent
Eagleye and similar soils: 25 percent
Rock outcrop: 15 percent

Minor components: 10 percent

Component Descriptions

Strych soils
Landform: Fan remnants, landslides
Parent material: Alluvium and colluvium derived from sandstone and shale
Slope: 15 to 70 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 4.6 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: shadscale saltbush, Indian ricegrass, saline wildrye, galleta, bottlebrush squirreltail, Bigelow sagebrush, Utah juniper, green Mormon tea
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 3 inches: extremely flaggy very fine sandy loam
3 to 15 inches: very flaggy very fine sandy loam
15 to 47 inches: very stony fine sandy loam
47 to 64 inches: very stony very fine sandy loam

Eagleye soils
Landform: Structural benches, escarpments
Parent material: Slope alluvium and residuum weathered from sandstone and shale
Slope: 15 to 60 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 2.1 inches (very low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 13 (moderately sodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: shadscale saltbush, galleta, Indian ricegrass, saline wildrye, bottlebrush squirreltail, Bigelow sagebrush, Utah juniper, green Mormon tea
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: very channery clay loam
2 to 8 inches: silty clay, silty clay loam
8 to 18 inches: silty clay loam, silty clay
18 inches: shale

Rock outcrop
Parent material: Sandstone
Slope: 8 to 20 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Farview and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Very shallow to hard bedrock
Badland
Composition: About 3 percent
Landform: Mesas
Distinguishing characteristics: Lack of soil development
Snapill and similar soils
Composition: About 2 percent
Landform: Mesas
Distinguishing characteristics: Deep to bedrock

Major Uses

Livestock grazing

103—Tocito-Gullied land complex, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Tocito and similar soils: 55 percent
Gullied land: 30 percent
Minor components: 15 percent

Component Descriptions

Tocito soils
Landform: Terraces
Parent material: Alluvium derived from shale and siltstone
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)

Available water capacity: About 8.9 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Alkali Bottom
Potential native vegetation: alkali sacaton, shadscale saltbush, bottlebrush squirreltail, fourwing saltbush, galleta, greasewood
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 7c

Typical Profile:
0 to 2 inches: very fine sandy loam
2 to 16 inches: loam, clay loam
16 to 63 inches: stratified very fine sandy loam to silt loam

Gullied land
Landform: Terraces
Parent material: Alluvium derived from shale and siltstone
Slope: 15 to 99 percent
Flooding hazard: None
Land capability subclass (nonirrigated): 8s

Minor Components
Ravola and similar soils
Composition: About 10 percent
Landform: Flood plains
Distinguishing characteristics: Occasional flooding
Riverwash
Composition: About 5 percent
Landform: Drainageways

Major Uses

Livestock grazing

104—Tohona-Kimnoli-Claysprings complex, 2 to 45 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Tohona and similar soils: 50 percent

Kimnoli and similar soils: 20 percent
Claysprings and similar soils: 15 percent
Minor components: 15 percent

Component Descriptions

Tohona soils
Landform: Cuestas, mesas
Parent material: Residuum weathered from shale and slope alluvium
Slope: 2 to 12 percent
Depth to restrictive feature: 30 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 3.4 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 30 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 30 (strongly sodic)
Ecological site: Clayey Saltdesert
Potential native vegetation: Gardner's saltbush, galleta, shadscale saltbush, alkali sacaton, bottlebrush squirreltail, sand dropseed
Land capability subclass (nonirrigated): 7c

Typical Profile:
0 to 1 inch: very gravelly sandy clay loam
1 inch to 11 inches: clay
11 to 33 inches: gypsiferous silty clay loam
33 inches: shale

Kimnoli soils
Landform: Structural benches, cuestas
Parent material: Eolian deposits and slope alluvium derived from sandstone
Slope: 2 to 10 percent
Depth to restrictive feature: 7 to 10 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 1.1 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: galleta, Indian ricegrass, shadscale saltbush, New Mexico feathergrass, alkali sacaton, Bigelow sagebrush
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 4 inches: loamy fine sand
4 to 9 inches: fine sandy loam
9 inches: sandstone

Claysprings soils
Landform: Structural benches, buttes, hills, cuestas
Parent material: Residuum weathered from shale
Slope: 35 to 45 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.0 to 0.001 in/hr (impermeable)
Available water capacity: About 1.9 inches (very low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 30 (strongly sodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: galleta, shadscale saltbush, Indian ricegrass, alkali sacaton, saline wildrye, bottlebrush squirreltail
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: extremely gravelly sandy clay loam
2 to 5 inches: clay
5 to 16 inches: clay, silty clay
16 inches: shale

Minor Components
Sheppard and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Sandy textures
Sogzie and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Sandy textures
Badland
Composition: About 3 percent
Landform: Mesas
Rock outcrop
Composition: About 2 percent
Landform: Mesas

Major Uses

Livestock grazing

105—Torriorthents, 12 to 65 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 6,200 feet
Mean annual precipitation: 7 to 13 inches
Mean annual air temperature: 50 to 56 degrees F.
Freeze-free period: 120 to 160 days

Map Unit Composition

Torriorthents and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Torriorthents soils
Landform: Terraces
Parent material: Alluvium derived from mixed sources
Slope: 12 to 65 percent
Depth to restrictive feature: 6 to 80 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 1.0 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: galleta, shadscale saltbush, saline wildrye, alkali sacaton, Indian ricegrass, bottlebrush squirreltail
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 4 inches: extremely stony sandy loam
4 to 14 inches: very stony silty clay loam
14 inches: shale

Minor Components
Mack and similar soils
Composition: About 5 percent
Landform: Terraces
Distinguishing characteristics: Developed subsoil horizons
Battlerock and similar soils
Composition: About 5 percent
Landform: Terraces
Distinguishing characteristics: Stratification

Major Uses

Livestock grazing

106—Torriorthents-Badland complex, 25 to 100 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 6,200 feet
Mean annual precipitation: 7 to 13 inches
Mean annual air temperature: 50 to 56 degrees F.
Freeze-free period: 120 to 160 days

Map Unit Composition

Torriorthents and similar soils: 55 percent
Badland: 30 percent
Minor components: 15 percent

Component Descriptions

Torriorthents soils
Landform: Knobs, hills
Parent material: Residuum weathered from shale
Slope: 25 to 100 percent
Depth to restrictive feature: 6 to 80 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 2.7 inches (very low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Clayey Saltdesert
Potential native vegetation: shadscale saltbush, alkali sacaton, Indian ricegrass, galleta
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 4 inches: silty clay loam
4 to 14 inches: silty clay loam
14 inches: shale

Badland
Landform: Knobs, hills, escarpments
Parent material: Shale
Slope: 25 to 100 percent
Depth to restrictive feature: 0 to 3 inches to bedrock (paralithic)
Land capability subclass (nonirrigated): 8e

Figure 7.—In the foreground, Towaoc-Kwaivu complex, 6 to 35 percent slopes, extends to the base of Ute Peak (elevation 9,977 ft.). Littlewater-Rubble land-Rock outcrop complex, 25 to 90 percent slopes, is in the background.

Major Uses

Livestock grazing

107—Towaoc-Kwiavu complex, 6 to 35 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,100 to 8,500 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F.
Freeze-free period: 80 to 100 days

Map Unit Composition

Towaoc and similar soils: 45 percent
Kwiavu and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Towaoc soils
Landform: Mountains (fig. 7)
Parent material: Slope alluvium derived from diorite

Slope: 6 to 35 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 3.6 inches (low)
Shrink-swell potential: About 1.0 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Brushy Loam
Potential native vegetation: Gambel oak, Utah serviceberry, muttongrass, slender wheatgrass, Arizona fescue, Letterman needlegrass, elk sedge, mountain snowberry, nodding brome, mountain big sagebrush, woods rose, arrowleaf balsamroot, common chokecherry
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 5 inches: very stony loam
5 to 12 inches: very gravelly loam
12 to 80 inches: very gravelly loam

Kwiavu soils
Landform: Mountains
Parent material: Slope alluvium derived from diorite
Slope: 6 to 35 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 8.0 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Brushy Loam
Potential native vegetation: Gambel oak, Utah serviceberry, muttongrass, slender wheatgrass, Arizona fescue, Letterman needlegrass, elk sedge, mountain snowberry, nodding brome, mountain big sagebrush, woods rose, arrowleaf balsamroot, common chokecherry
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 9 inches: loam
9 to 15 inches: stony loam
15 to 60 inches: stony loam

Minor Components
Rock outcrop

Composition: About 5 percent
Landform: Mountains
Herm and similar soils
Composition: About 5 percent
Landform: Mountains
Distinguishing characteristics: Clayey textures
Rubbleland and similar soils
Composition: About 5 percent
Landform: Mountains

108—Towaoc very gravelly sandy loam, 35 to 75 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,100 to 8,500 feet
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F.
Freeze-free period: 80 to 100 days

Map Unit Composition

Towaoc and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Towaoc soils
Landform: Mountains
Parent material: Colluvium and slope alluvium derived from diorite
Slope: 35 to 75 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 3.6 inches (low)
Shrink-swell potential: About 1.0 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Brushy Loam
Potential native vegetation: Gambel oak, Utah serviceberry, muttongrass, slender wheatgrass, Arizona fescue, Letterman needlegrass, elk sedge, mountain snowberry, nodding brome, mountain big sagebrush, woods rose, arrowleaf balsamroot, aspen peavine, common chokecherry
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 5 inches: very stony loam
5 to 12 inches: very gravelly loam
11 to 80 inches: very gravelly loam

Minor Components
Rock outcrop
Composition: About 10 percent
Landform: Mountains
Herm and similar soils
Composition: About 5 percent
Landform: Mountains
Distinguishing characteristics: Clayey textures
Rubbleland and similar soils
Composition: About 5 percent
Landform: Mountains

109—Tragmon-Sheek complex, 12 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 7,100 to 8,500 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 43 to 47 degrees F.
Freeze-free period: 80 to 100 days

Map Unit Composition

Tragmon and similar soils: 50 percent
Sheek and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Tragmon soils
Landform: Canyons
Parent material: Slope alluvium derived from sandstone and shale
Slope: 12 to 20 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 8.3 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 1 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Brushy Loam
Potential native vegetation: Gambel oak, Utah serviceberry, Wyoming big sagebrush, common snowberry, muttongrass, prairie junegrass, western wheatgrass
Land capability subclass (nonirrigated): 6e

Typical Profile:
0 to 5 inches: sandy loam
5 to 11 inches: loam
11 to 40 inches: loam

40 to 60 inches: loam

Sheek soils
Landform: Canyons
Parent material: Slope alluvium derived from sandstone and shale
Slope: 12 to 25 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 6.2 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Brushy Loam
Potential native vegetation: Gambel oak, Utah serviceberry, Arizona fescue, antelope bitterbrush, common snowberry, mountain brome, mountainmahogany, prairie junegrass, western wheatgrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 4 inches: cobbly loam
4 to 16 inches: very cobbly clay loam
16 to 42 inches: very gravelly clay loam
42 to 60 inches: very stony clay loam

Minor Components
Northrim and similar soils
Composition: About 5 percent
Landform: Canyons
Distinguishing characteristics: Lighter colored surface layers
Rock outcrop
Composition: About 5 percent
Landform: Canyons
Archuleta and similar soils
Composition: About 5 percent
Landform: Canyons
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

110—Tupuyci-Ives complex, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Tupuyci and similar soils: 60 percent
Ives and similar soils: 20 percent
Minor components: 20 percent

Component Descriptions

Tupuyci soils
Landform: Flood plains
Parent material: Alluvium derived from mixed sources
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 1.8 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Very Rare
Seasonal high water table depth: None
Runoff class: Very low
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Alkali Bottom
Potential native vegetation: alkali sacaton, greasewood, fourwing saltbush, galleta, inland saltgrass, shadscale saltbush, western wheatgrass
Land capability subclass (irrigated): 7s
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: fine sandy loam
2 to 80 inches: stratified loamy sand to extremely cobbly sandy loam

Ives soils
Landform: Flood plains
Parent material: Alluvium derived from mixed sources
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Very Rare
Seasonal high water table depth: None
Runoff class: Very low
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 3 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 3 (slightly sodic)
Ecological site: Alkali Bottom
Potential native vegetation: alkali sacaton, greasewood, fourwing saltbush, galleta, inland saltgrass, shadscale saltbush, western wheatgrass
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 1 inch: sandy loam
1 inch to 80 inches: stratified loamy sand to sandy loam

Minor Components
Battlerock and similar soils
Composition: About 10 percent
Landform: Flood plains
Distinguishing characteristics: Loamy textures
Persayo and similar soils
Composition: About 10 percent
Landform: Hills
Distinguishing characteristics: Shallow to bedrock

111—Typic Torriorthents-Rock outcrop complex, 12 to 80 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 150 days

Map Unit Composition

Typic Torriorthents and similar soils: 60 percent
Rock outcrop: 25 percent
Minor components: 15 percent

Component Descriptions

Typic Torriorthents soils
Landform: Canyons
Parent material: Residuum weathered from sandstone and shale
Slope: 12 to 80 percent
Depth to restrictive feature: 6 to 80 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 1.2 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 2 percent
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 10 (slightly sodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: saline wildrye, galleta, shadscale saltbush, Bigelow sagebrush, alkali sacaton, Indian ricegrass, Utah juniper, bottlebrush squirreltail, fourwing saltbush
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 3 inches: extremely stony sandy loam
3 to 16 inches: stony sandy loam
16 inches: shale

Rock outcrop
Landform: Canyons
Parent material: Sandstone
Slope: 12 to 80 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Zwicker and similar soils
Composition: About 5 percent
Landform: Canyons
Distinguishing characteristics: Developed subsoil horizons
Uzacol and similar soils
Composition: About 5 percent
Landform: Canyons
Distinguishing characteristics: Developed subsoil horizons
Badlands
Composition: About 5 percent
Landform: Canyons

Major Uses

Livestock grazing

112—Ustic Torrifluvents, 0 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Ustic Torrifluvents and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Ustic Torrifluvents soils
Landform: Flood plains
Parent material: Alluvium derived from mixed sources
Slope: 0 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 4.2 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Rare
Seasonal high water table depth: None

Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 8 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy Bottom
Potential native vegetation: Basin big sagebrush, galleta, Indian ricegrass, alkali sacaton, greasewood, rubber rabbitbrush, western wheatgrass
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 3 inches: loamy sand
3 to 11 inches: fine sandy loam
11 to 60 inches: stratified loamy sand to very gravelly sandy loam

Minor Components
Romberg and similar soils
Composition: About 10 percent
Landform: Hills
Distinguishing characteristics: Developed subsoil horizons
Gullied land
Composition: About 10 percent
Landform: Flood plains

Major Uses

Livestock grazing

113—Ustic Torriorthents-Gullied land complex, 1 to 60 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Ustic Torriorthents and similar soils: 45 percent
Gullied land: 40 percent
Minor components: 15 percent

Component Descriptions

Ustic Torriorthents soils
Landform: Terraces
Parent material: Alluvium derived from sandstone and shale
Slope: 1 to 12 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 7.3 inches (moderate)
Shrink-swell potential: About 4.5 percent (moderate)

Flooding hazard: Rare
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Alkali Bottom
Potential native vegetation: Alkali sacaton, greasewood, basin big sagebrush, fourwing saltbush, galleta, shadscale saltbush, western wheatgrass
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 7 inches: variable
7 to 60 inches: clay loam

Gullied land
Landform: Terraces
Parent material: Alluvium derived from sandstone and shale
Slope: 25 to 60 percent
Depth to restrictive feature: 60 inches or more
Flooding hazard: Rare
Land capability subclass (nonirrigated): 8e

Minor Components
Sideshow and similar soils
Composition: About 5 percent
Landform: Terraces
Distinguishing characteristics: High shrink-swell
Mikim and similar soils
Composition: About 5 percent
Landform: Terraces
Lillings and similar soils
Composition: About 5 percent
Landform: Terraces
Distinguishing characteristics: Stratification

Major Uses

Livestock grazing

114—Uzacol-Zwicker-Claysprings complex, 3 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Uzacol and similar soils: 35 percent

Zwicker and similar soils: 30 percent
Claysprings and similar soils: 20 percent
Minor components: 15 percent

Component Descriptions

Uzacol soils
Landform: Hills
Parent material: Slope alluvium derived from shale
Slope: 3 to 9 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 9.8 inches (high)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 15 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 50 (strongly sodic)
Ecological site: Clayey Saltdesert
Potential native vegetation: Gardner's saltbush, galleta, shadscale saltbush, alkali sacaton, Indian ricegrass, bottlebrush squirreltail, mat saltbush
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 5 inches: clay loam
5 to 45 inches: clay
45 to 59 inches: clay
59 inches: shale

Zwicker soils
Landform: Hills
Parent material: Residuum weathered from shale
Slope: 3 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 5.4 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 10 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Clayey Saltdesert
Potential native vegetation: Gardner's saltbush, galleta, shadscale saltbush, alkali sacaton, Indian ricegrass, bottlebrush squirreltail, mat saltbush
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 1 inch: stony clay loam
1 inch to 4 inches: clay loam
4 to 32 inches: clay
32 inches: shale

Claysprings soils
Landform: Knobs
Parent material: Residuum weathered from shale
Slope: 3 to 12 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 2.9 inches (very low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 10 percent
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 20 (moderately sodic)
Ecological site: Clayey Saltdesert
Potential native vegetation: Gardner's saltbush, galleta, shadscale saltbush, alkali sacaton, Indian ricegrass, bottlebrush squirreltail, mat saltbush
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 3 inches: very stony clay loam
3 to 18 inches: clay
18 inches: shale

Minor Components
Badland
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: Lack of soil development
Battlerock and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Loamy textures
Recapture and similar soils
Composition: About 3 percent
Landform: Hills
Distinguishing characteristics: Loamy textures
Rock outcrop
Composition: About 2 percent
Landform: Hills

Major Uses

Livestock grazing

115—Uzona loam, 1 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Uzona and similar soils: 75 percent
Minor components: 25 percent

Component Descriptions

Uzona soils
Landform: Pediments
Parent material: Residuum and slope alluvium derived from shale
Slope: 1 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.0 to 0.001 in/hr (impermeable)
Available water capacity: About 8.9 inches (moderate)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 5 percent
Gypsum maximum: About 5 percent
Salinity maximum: About 50 mmhos/cm (strongly saline)
Sodium adsorption ratio maximum: About 60 (strongly sodic)
Ecological site: Clayey Saltdesert
Potential native vegetation: Gardner's saltbush, shadscale saltbush, Indian ricegrass, alkali sacaton, bottlebrush squirreltail, galleta, mat saltbush
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: silt loam
2 to 22 inches: clay
22 to 80 inches: clay

Minor Components
Kava and similar soils
Composition: About 10 percent
Landform: Pediments
Distinguishing characteristics: Shallow to bedrock
Cowboy and similar soils
Composition: About 10 percent
Landform: Pediments
Distinguishing characteristics: Less salt concentration

Oagamati and similar soils
Composition: About 5 percent
Landform: Pediments
Distinguishing characteristics: Less salt concentration

Major Uses

Livestock grazing

116—Vessilla-Rock outcrop complex, 5 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Vessilla and similar soils: 65 percent
Rock outcrop: 25 percent
Minor components: 10 percent

Component Descriptions

Vessilla soils
Landform: Structural benches, cuestas, mesas
Parent material: Eolian deposits and slope alluvium derived from sandstone
Slope: 5 to 25 percent
Depth to restrictive feature: 4 to 10 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 0.9 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 20 percent
Gypsum maximum: None
Salinity maximum: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Ecological site: Shallow Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, Indian ricegrass, Wyoming big sagebrush, muttongrass, antelope bitterbrush, bottlebrush squirreltail, cliffrose, true mountainmahogany, green Mormon tea, thrifty goldenweed
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 3 inches: channery fine sandy loam
3 to 8 inches: fine sandy loam
8 inches: sandstone

Rock outcrop
Landform: Structural benches, cuestas, mesas
Parent material: Sandstone
Slope: 5 to 35 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Atlatl and similar soils
Composition: About 10 percent
Landform: Structural benches, cuestas
Distinguishing characteristics: Moderately deep to bedrock

Major Uses

Livestock grazing

117—Vosburg fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Vosburg and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Vosburg soils
Landform: Drainageways, canyons
Parent material: Alluvium derived from sandstone and shale
Slope: 3 to 8 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 9.6 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Deep Loam
Potential native vegetation: needleandthread, basin big sagebrush, western wheatgrass, muttongrass, prairie junegrass, Indian ricegrass, rabbitbrush
Land capability subclass (irrigated): 4e
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 15 inches: fine sandy loam
15 to 60 inches: sandy clay loam

Minor Components
Umbarg and similar soils
Composition: About 14 percent
Landform: Drainageways
Distinguishing characteristics: Less soil development
Aquolls and similar soils
Composition: About 1 percent
Landform: Depressions
Distinguishing characteristics: Presence of water table

Major Uses

Livestock grazing

118—Water

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 8,500 feet
Mean annual precipitation: 7 to 20 inches
Mean annual air temperature: 43 to 56 degrees F.
Freeze-free period: 80 to 160 days

Map Unit Composition

Water: 100 percent

Component Descriptions

Water: Man-made and natural bodies of water

119—Water-Riverwash complex

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 8,500 feet
Mean annual precipitation: 7 to 20 inches
Mean annual air temperature: 43 to 56 degrees F.
Freeze-free period: 80 to 160 days

Map Unit Composition

Water: 70 percent
Riverwash: 20 percent
Minor components: 10 percent

Component Descriptions

Water
Landform: Flood plains
Slope: 0 to 2 percent

Riverwash
Landform: Flood plains
Parent material: Alluvium derived from mixed sources
Slope: 0 to 2 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Very poorly drained
Slowest permeability: 6.0 to 20 in/hr (rapid)
Available water capacity: About 1.7 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: Frequent
Seasonal high water table depth: About 0 to 24 inches
Land capability subclass (nonirrigated): 8

Minor Components
Walress and similar soils
Composition: About 5 percent
Landform: Flood plains
Distinguishing characteristics: Somewhat poorly drained
Bebeevar and similar soils
Composition: About 5 percent
Landform: Flood plains
Distinguishing characteristics: Moderately well drained

Major Uses

Livestock grazing

120—Wauquie very stony loam, 6 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Wauquie and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Wauquie soils
Landform: Alluvial fans
Parent material: Slope alluvium derived from sandstone and shale
Slope: 6 to 25 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 4.5 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium

Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Steep shallow clay loam Pinyon-Juniper
Potential native vegetation: Utah juniper, twoneedle pinyon, saline wildrye, muttongrass, true mountainmahogany, Gambel oak, Indian ricegrass, Wyoming big sagebrush, antelope bitterbrush, western wheatgrass
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: very stony loam
2 to 20 inches: very stony loam
20 to 60 inches: very stony loam

Minor Components
Wetherill and similar soils
Composition: About 10 percent
Landform: Alluvial fans
Distinguishing characteristics: Fewer rock fragments
Zigzag and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

121—Wauquie-Dolcan complex, 6 to 25 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Wauquie and similar soils: 45 percent
Dolcan and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Wauquie soils
Landform: Canyons
Parent material: Colluvium derived from sandstone and shale
Slope: 6 to 25 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 5.2 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None

Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Steep shallow clay loam Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, saline wildrye, muttongrass, true mountainmahogany, Gambel oak, Indian ricegrass, Wyoming big sagebrush, antelope bitterbrush, western wheatgrass
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: stony fine sandy loam
2 to 6 inches: very cobbly loam
6 to 22 inches: very cobbly loam
22 to 60 inches: very cobbly loam

Dolcan soils
Landform: Canyons
Parent material: Residuum weathered from sandstone and shale
Slope: 6 to 25 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 1.7 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Steep shallow clay loam Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, Indian ricegrass, mountainmahogany, twoneedle pinyon, western wheatgrass, saline wildrye, Utah serviceberry, common snowberry, galleta, muttongrass
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 2 inches: extremely cobbly fine sandy loam
2 to 11 inches: cobbly clay loam
11 inches: shale

Minor Components
Rock outcrop
Composition: About 5 percent
Landform: Canyons
Gladel and similar soils
Composition: About 5 percent
Landform: Canyons
Distinguishing characteristics: Shallow to hard bedrock
Prater and similar soils
Composition: About 3 percent

Landform: Canyons
Distinguishing characteristics: Clayey textures
Wetherill and similar soils
Composition: About 2 percent
Landform: Canyons
Distinguishing characteristics: Fewer rock fragments

Major Uses

Livestock grazing

122—Wauquie-Dolcan-Rock outcrop complex, 25 to 80 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Wauquie and similar soils: 40 percent
Dolcan and similar soils: 30 percent
Rock outcrop: 15 percent
Minor components: 10 percent

Component Descriptions

Wauquie soils
Landform: Canyons
Parent material: Colluvium derived from sandstone and shale
Slope: 25 to 55 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 5.2 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Steep shallow clay loam Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, Gambel oak, saline wildrye, muttongrass, true mountainmahogany, Indian ricegrass, Wyoming big sagebrush, antelope bitterbrush, western wheatgrass
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: stony fine sandy loam
2 to 6 inches: very cobbly loam
6 to 22 inches: very cobbly clay loam
22 to 60 inches: very cobbly loam

Dolcan soils
Landform: Canyons
Parent material: Residuum weathered from sandstone and shale
Slope: 25 to 80 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 1.7 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Steep shallow clay loam Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, Indian ricegrass, mountainmahogany, galleta, Utah serviceberry, common snowberry, muttongrass, western wheatgrass
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: extremely cobbly fine sandy loam
2 to 11 inches: cobbly clay loam
11 inches: shale

Rock outcrop
Landform: Canyons
Parent material: Sandstone
Slope: 25 to 80 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Gladel and similar soils
Composition: About 5 percent
Landform: Canyons
Distinguishing characteristics: Shallow to hard bedrock
Ustorthents and similar soils
Composition: About 3 percent
Landform: Canyons
Distinguishing characteristics: Depth to bedrock
Wetherill and similar soils
Composition: About 2 percent
Landform: Canyons
Distinguishing characteristics: Fewer rock fragments

Major Uses

Livestock grazing

123—Wetherill-Atlatl association, 1 to 15 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Wetherill and similar soils: 50 percent
Atlatl and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Wetherill soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 1 to 15 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 10.4 inches (high)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Loamy mesa top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, twoneedle pinyon, Utah juniper, muttongrass, Wyoming big sagebrush, twoneedle pinyon, Indian ricegrass, antelope bitterbrush, bottlebrush squirreltail, true mountainmahogany, green Mormon tea
Land capability subclass (nonirrigated): 6e

Typical Profile:
0 to 3 inches: very fine sandy loam
3 to 18 inches: loam
18 to 42 inches: loam
42 to 70 inches: loam

Atlatl soils
Landform: Mesas
Parent material: Eolian deposits and residuum and slope alluvium derived from

sandstone and siltstone
Slope: 1 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 4.4 inches (low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 90 percent
Gypsum maximum: None
Salinity maximum: About 1 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 1 (slightly sodic)
Ecological site: Loamy mesa top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, Indian ricegrass, muttongrass, Wyoming big sagebrush, bottlebrush squirreltail, true mountainmahogany, antelope bitterbrush, green Mormon tea
Land capability subclass (nonirrigated): 4c

Typical Profile:
0 to 2 inches: gravelly fine sandy loam
2 to 17 inches: fine sandy loam
17 to 30 inches: fine sandy loam
30 inches: sandstone

Minor Components
Vessilla and similar soils
Composition: About 10 percent
Landform: Mesas
Distinguishing characteristics: Very shallow to bedrock
Rock outcrop
Composition: About 5 percent
Landform: Mesas

Major Uses

Livestock grazing

124—Wetherill-Kucu complex, 3 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Wetherill and similar soils: 60 percent
Kucu and similar soils: 25 percent
Minor components: 15 percent

Component Descriptions

Wetherill soils
Landform: Paleoterraces, fan remnants
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 10.2 inches (high)
Shrink-swell potential: About 2.0 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 40 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, true mountainmahogany, Wyoming big sagebrush, antelope bitterbrush, bottlebrush squirreltail, needleandthread
Land capability subclass (nonirrigated): 3e

Typical Profile:
0 to 9 inches: silt loam
9 to 21 inches: silt loam
21 to 43 inches: silt loam
43 to 80 inches: silt loam

Kucu soils
Landform: Paleoterraces, fan remnants
Parent material: Eolian deposits over old alluvium derived from mixed sources
Slope: 3 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 4.8 inches (low)
Shrink-swell potential: About 1.0 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 70 percent
Gypsum maximum: About 1 percent
Salinity maximum: About 6 mmhos/cm (slightly saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Shallow Loamy Mesa Top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, Indian ricegrass, twoneedle pinyon, antelope bitterbrush, muttongrass, bottlebrush squirreltail, needleandthread, true mountainmahogany
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 2 inches: loam

2 to 15 inches: clay loam
15 to 38 inches: very gravelly sandy loam
38 to 80 inches: extremely gravelly sandy loam

Minor Components

Dolcan and similar soils
Composition: About 10 percent
Landform: Paleoterraces
Distinguishing characteristics: Shallow to bedrock

Pulpit and similar soils
Composition: About 5 percent
Landform: Paleoterraces
Distinguishing characteristics: Moderately deep to bedrock

Major Uses

Livestock grazing

125—Wetherill loam, 3 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Wetherill and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Wetherill soils

Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.9 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 4 (slightly sodic)
Ecological site: Loamy Foothills
Potential native vegetation: Twoneedle pinyon, Utah juniper, Wyoming big sagebrush, Gambel oak, Indian ricegrass, muttongrass, bottlebrush squirreltail, Utah serviceberry, antelope bitterbrush, mountain snowberry (fig. 8)
Land capability subclass (irrigated): 3e

Land capability subclass (nonirrigated): 3e

Typical Profile:
0 to 3 inches: loam
3 to 7 inches: loam
7 to 48 inches: loam
48 to 60 inches: loam

Minor Components

Pulpit and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to soft bedrock

Sharps and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to soft bedrock

Aquents and similar soils
Composition: About 3 percent
Landform: Drainageways
Distinguishing characteristics: Water table

Ackmen and similar soils
Composition: About 2 percent
Landform: Drainageway
Distinguishing characteristics: Darker surface horizon

Figure 8.—Typical stand of mature pinyon pine and Utah juniper on the Wetherill silt loam, 3 to 6 percent slopes.

126—Wetherill silt loam, 1 to 3 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Wetherill and similar soils: 90 percent
Minor components: 10 percent

Component Descriptions

Wetherill soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 1 to 3 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy mesa top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, true mountainmahogany, Wyoming big sagebrush, antelope bitterbrush, bottlebrush squirreltail, needleandthread
Land capability subclass (irrigated): 3c
Land capability subclass (nonirrigated): 3c

Typical Profile:
0 to 9 inches: silt loam
9 to 21 inches: silt loam
21 to 43 inches: silt loam
43 to 80 inches: silt loam

Minor Components
Sharps and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to bedrock
Pulpit and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to bedrock

Major Uses

Livestock grazing

127—Wetherill silt loam, 3 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Wetherill and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Wetherill soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy mesa top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper muttongrass, Indian ricegrass, true mountainmahogany, antelope bitterbrush, bottlebrush squirreltail, needleandthread
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 3e

Typical Profile:
0 to 9 inches: silt loam
9 to 21 inches: silt loam
21 to 43 inches: silt loam
43 to 80 inches: silt loam

Minor Components
Sharps and similar soils
Composition: About 10 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to bedrock

Pulpit and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to bedrock

Major Uses

Livestock grazing

128—Wetherill silt loam, 6 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Wetherill and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Wetherill soils
Landform: Mesas
Parent material: Eolian deposits derived from sandstone
Slope: 6 to 12 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Loamy mesa top Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, true mountainmahogany, antelope bitterbrush, bottlebrush squirreltail, needleandthread
Land capability subclass (irrigated): 4e
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 9 inches: silt loam
9 to 21 inches: silt loam
21 to 43 inches: silt loam
43 to 80 inches: silt loam

Minor Components

Sharps and similar soils
Composition: About 10 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to bedrock

Pulpit and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Moderately deep to bedrock

Gladel and similar soils
Composition: About 5 percent
Landform: Mesas
Distinguishing characteristics: Shallow to bedrock

Major Uses

Livestock grazing

129—Wetherill-Wetoe complex, 3 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Wetherill and similar soils: 45 percent
Wetoe and similar soils: 30 percent
Minor components: 25 percent

Component Descriptions

Wetherill soils

Landform: Fan remnants
Parent material: Eolian deposits derived from sandstone
Slope: 3 to 12 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 10.0 inches (high)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 30 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Southwest Mountain Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Wyoming

big sagebrush, Gambel oak, Indian ricegrass, bottlebrush squirreltail, Utah serviceberry, antelope bitterbrush, mountain snowberry
Land capability subclass (nonirrigated): 4e

Typical Profile:
0 to 9 inches: silt loam
9 to 21 inches: silt loam
21 to 43 inches: silt loam
43 to 80 inches: silt loam

Wetoe soils
Landform: Fan remnants
Parent material: Slope alluvium derived from diorite
Slope: 3 to 12 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.001 to 0.06 in/hr (very slow)
Available water capacity: About 4.7 inches (low)
Shrink-swell potential: About 0.2 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Southwest Mountain Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, Gambel oak, antelope bitterbrush, bottlebrush squirreltail, Utah serviceberry, Wyoming big sagebrush, mountain snowberry
Land capability subclass (nonirrigated): 7s

Typical Profile:
0 to 7 inches: very cobbly silt loam
7 to 40 inches: very cobbly loam
40 to 60 inches: very cobbly coarse sandy loam

Minor Components
Cahona and similar soils
Composition: About 10 percent
Landform: Fan remnants
Distinguishing characteristics: More carbonates
Sharps and similar soils
Composition: About 10 percent
Landform: Fan remnants
Distinguishing characteristics: Depth to bedrock
Herm and similar soils
Composition: About 5 percent
Landform: Fan remnants
Distinguishing characteristics: Clayey textures

Major Uses

Livestock grazing

130—Wetoe-Nees-Rock outcrop complex, 35 to 90 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 8,800 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Wetoe and similar soils: 45 percent
Nees and similar soils: 20 percent
Rock outcrop: 15 percent
Minor components: 20 percent

Component Descriptions

Wetoe soils
Landform: Mountains (fig. 9)
Parent material: Colluvium and slope alluvium derived from diorite
Slope: 35 to 90 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained

Figure 9.— Coarse fragments cover the surface of the Wetoe soil in an area of Wetoe-Nees-Rock outcrop complex, 35 to 90 percent slopes.

Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 3.3 inches (low)
Shrink-swell potential: About 1.0 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Southwest Mountain Pinyon-Juniper
Potential native vegetation: twoneedle pinyon, Utah juniper, muttongrass, Indian ricegrass, Wyoming big sagebrush, Gambel oak, bottlebrush squirreltail, Utah serviceberry, antelope bitterbrush, mountain snowberry, yucca
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 8 inches: very gravelly loam
8 to 80 inches: very gravelly loam

Nees soils
Landform: Mountains
Parent material: Residuum weathered from diorite
Slope: 35 to 90 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Available water capacity: About 0.5 inches (very low)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: None
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Southwest Mountain Pinyon-Juniper
Potential native vegetation: Twoneedle pinyon, Utah juniper muttongrass, Indian ricegrass, Gambel oak, antelope bitterbrush, bottlebrush squirreltail, Utah serviceberry, Wyoming big sagebrush, mountain snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 3 inches: extremely gravelly loam
3 to 11 inches: extremely gravelly loam
11 inches: diorite

Rock outcrop
Landform: Mountains
Parent material: Diorite
Slope: 35 to 90 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Land capability subclass (nonirrigated): 8s

Minor Components
Towaoc and similar soils

Composition: About 10 percent
Landform: Mountains
Distinguishing characteristics: Cooler soil temperature
Katzine and similar soils
Composition: About 5 percent
Landform: Mountains
Distinguishing characteristics: Calcium carbonate concentrations
Wetherill and similar soils
Composition: About 5 percent
Landform: Mountains
Distinguishing characteristics: Fewer rock fragments

131—Yarts fine sandy loam, 1 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Yarts and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Yarts soils
Landform: Terraces
Parent material: Alluvium derived from sandstone
Slope: 1 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Available water capacity: About 7.3 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very low
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Semidesert Loam
Potential native vegetation: galleta, Indian ricegrass, Wyoming big sagebrush, New Mexico feathergrass, blue grama, western wheatgrass, winterfat
Land capability subclass (irrigated): 3e
Land capability subclass (nonirrigated): 4c

Typical Profile:
0 to 9 inches: fine sandy loam

A9 to 13 inches: sandy loam
13 to 60 inches: sandy loam

Minor Components
Uzacol and similar soils
Composition: About 10 percent
Landform: Terraces
Distinguishing characteristics: Clayey texture
Torriorthents
Composition: About 5 percent
Landform: Hills

Major Uses

Livestock grazing

132—Yogovuci-Taqoci complex, 2 to 6 percent slopes

Map Unit Setting

Major Land Resource Area: 35
Elevation: 4,800 to 5,700 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F.
Freeze-free period: 135 to 160 days

Map Unit Composition

Yogovuci and similar soils: 40 percent
Taqoci and similar soils: 40 percent
Minor components: 20 percent

Component Descriptions

Yogovuci soils
Landform: Paleoterraces, fan remnants
Parent material: Eolian deposits over old alluvium derived from mixed sources
Slope: 2 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 8.9 inches (moderate)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 15 percent
Gypsum maximum: About 20 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 5 (slightly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, bottlebrush squirreltail, shadscale saltbush, Indian ricegrass, fourwing saltbush, needleandthread, sand dropseed
Land capability subclass (irrigated): 4s
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 2 inches: very fine sandy loam
2 to 6 inches: loam
6 to 13 inches: clay loam
13 to 35 inches: gypsiferous clay loam
35 to 75 inches: stratified loamy sand to sandy loam to loam to clay loam to clay
75 to 80 inches: extremely gravelly loamy sand

Taqoci soils
Landform: Paleoterraces, fan remnants
Parent material: Eolian deposits over old alluvium derived from mixed sources
Slope: 2 to 6 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Available water capacity: About 7.2 inches (moderate)
Shrink-swell potential: About 1.5 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Low
Calcium carbonate maximum: About 25 percent
Gypsum maximum: About 15 percent
Salinity maximum: About 16 mmhos/cm (moderately saline)
Sodium adsorption ratio maximum: About 30 (strongly sodic)
Ecological site: Alkali Flat
Potential native vegetation: alkali sacaton, galleta, bottlebrush squirreltail, shadscale saltbush, Indian ricegrass, fourwing saltbush, needleandthread, sand dropseed
Land capability subclass (irrigated): 4s
Land capability subclass (nonirrigated): 6c

Typical Profile:
0 to 9 inches: very fine sandy loam
9 to 26 inches: sandy clay loam
26 to 37 inches: very fine sandy loam
37 to 80 inches: stratified coarse sandy loam to sandy clay loam to very gravelly loam

Minor Components
Gypsey and similar soils
Composition: About 10 percent
Landform: Paleoterraces
Distinguishing characteristics: Moderately deep to bedrock
Mack and similar soils
Composition: About 5 percent
Landform: Paleoterraces
Distinguishing characteristics: Lacks gypsum and sodium accumulations
Salamander and similar soils
Composition: About 5 percent
Landform: Paleoterraces
Distinguishing characteristics: More gypsum and calcium carbonate

Major Uses

Livestock grazing

133—Zigzag-Sideshow complex, 25 to 65 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 6,200 to 7,400 feet
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F.
Freeze-free period: 100 to 120 days

Map Unit Composition

Zigzag and similar soils: 60 percent
Sideshow and similar soils: 30 percent
Minor components: 20 percent

Component Descriptions

Zigzag soils
Landform: Knobs
Parent material: Residuum weathered from shale
Slope: 25 to 65 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 3.1 inches (low)
Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Southwest Mountain Pinyon-Juniper
Potential native vegetation: Utah juniper, twoneedle pinyon, muttongrass, western wheatgrass, Wyoming big sagebrush, Indian ricegrass, antelope bitterbrush, bottlebrush squirreltail, galleta, true mountainmahogany, Utah serviceberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 1 inch: very channery clay loam
1 inch to 5 inches: clay loam
5 to 19 inches: clay
19 inches: shale

Sideshow soils
Landform: Alluvial fans
Parent material: Alluvium derived from shale
Slope: 25 to 40 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 11.2 inches (high)

Shrink-swell potential: About 7.5 percent (high)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 5 percent
Gypsum maximum: None
Salinity maximum: About 4 mmhos/cm (very slightly saline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Clayey Foothills
Potential native vegetation: Western wheatgrass, Wyoming big sagebrush, Indian ricegrass, bottlebrush squirreltail, prairie junegrass, rubber rabbitbrush
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 3 inches: silty clay loam
3 to 60 inches: clay

Minor Components
Dolcan and similar soils
Composition: About 10 percent
Landform: Knobs
Distinguishing characteristics: Loamy textures
Wauquie and similar soils
Composition: About 5 percent
Landform: Alluvial fans
Distinguishing characteristics: More rock fragments
Ramper and similar soils
Composition: About 5 percent
Landform: Drainageways
Distinguishing characteristics: Loamy textures

Major Uses

Livestock grazing

134—Zyme gravelly clay loam, 3 to 12 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Zyme and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Zyme soils
Landform: Knobs
Parent material: Residuum weathered from shale

Slope: 3 to 12 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 1.8 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: Indian ricegrass, galleta, shadscale saltbush, Wyoming big sagebrush, black sagebrush, bottlebrush squirreltail, fourwing saltbush, Utah juniper, twoneedle pinyon
Land capability subclass (nonirrigated): 6s

Typical Profile:
0 to 2 inches: gravelly clay loam
2 to 12 inches: clay loam
12 inches: shale

Minor Components
Crosscan and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: More rock fragments
Mikim and similar soils
Composition: About 5 percent
Landform: Alluvial fans
Distinguishing characteristics: Loamy textures
Rock outcrop
Composition: About 5 percent
Landform: Hills

Major Uses

Livestock grazing

135—Zyme-Katzine, dry, complex, 15 to 75 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Zyme and similar soils: 45 percent
Katzine, dry and similar soils: 35 percent

Minor components: 20 percent

Component Descriptions

Zyme soils
Landform: Hills
Parent material: Residuum weathered from shale
Slope: 25 to 75 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 1.8 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: High
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: Utah juniper, twoneedle pinyon, Indian ricegrass, saline wildrye, muttongrass, Utah serviceberry, common snowberry, galleta, mountainmahogany, western wheatgrass, cliffrose
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 4 inches: clay loam
4 to 18 inches: very parachannery clay loam
18 inches: shale

Katzine, dry soils
Landform: Hills, fans
Parent material: Slope alluvium and colluvium derived from diorite
Slope: 15 to 60 percent
Depth to restrictive feature: 60 inches or more
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 3.2 inches (low)
Shrink-swell potential: About 1.0 percent (low)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Medium
Calcium carbonate maximum: About 25 percent
Gypsum maximum: None
Salinity maximum: About 0 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: Utah juniper, twoneedle pinyon, Indian ricegrass, saline wildrye, Utah serviceberry, common snowberry, galleta, mountainmahogany, muttongrass, western wheatgrass
Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: very gravelly sandy loam

2 to 12 inches: very gravelly sandy loam
12 to 80 inches: very gravelly sandy loam

Minor Components

Romberg and similar soils
Composition: About 10 percent
Landform: Hills
Distinguishing characteristics: Sandstone parent material

Awitava and similar soils
Composition: About 5 percent
Landform: Remnant terraces
Distinguishing characteristics: Petrocalcic material

Cragola and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: Shallow to bedrock

136—Zyme very channery clay loam, 12 to 65 percent slopes

Map Unit Setting

Major Land Resource Area: 36
Elevation: 5,400 to 6,200 feet
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F.
Freeze-free period: 120 to 135 days

Map Unit Composition

Zyme and similar soils: 80 percent
Minor components: 15 percent

Component Descriptions

Zyme soils

Landform: Knobs
Parent material: Residuum weathered from shale
Slope: 12 to 65 percent
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Drainage class: Well drained
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Available water capacity: About 1.8 inches (very low)
Shrink-swell potential: About 4.5 percent (moderate)
Flooding hazard: None
Seasonal high water table depth: None
Runoff class: Very high
Calcium carbonate maximum: About 10 percent
Gypsum maximum: None
Salinity maximum: About 2 mmhos/cm (nonsaline)
Sodium adsorption ratio maximum: About 0 (nonsodic)
Ecological site: Saltdesert Breaks
Potential native vegetation: Indian ricegrass, galleta, shadscale saltbush, Wyoming big sagebrush, black sagebrush, bottlebrush squirreltail, fourwing saltbush, Utah juniper, twoneedle pinyon

Land capability subclass (nonirrigated): 7e

Typical Profile:
0 to 2 inches: very channery clay loam
2 to 12 inches: clay loam
12 inches: shale

Minor Components
Crosscan and similar soils
Composition: About 5 percent
Landform: Hills
Distinguishing characteristics: More rock fragments
Mikim and similar soils
Composition: About 5 percent
Landform: Alluvial fans
Distinguishing characteristics: Loamy textures
Rock outcrop
Composition: About 5 percent
Landform: Hills

Major Uses

Livestock grazing

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations

appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

The agricultural history of this area goes back well over a thousand years, to the time when the area was occupied by the Anasazi or Ancestral Puebloans. During this period, people lived in scattered settlements across the Colorado Plateau, growing corn, squash, and beans. Evidence of their settlements can be found in the canyons, uplands, and along the drainageways and rivers in the survey area. Since their departure from the area nearly 700 years ago, the soils in these areas have rarely been tilled. Several attempts at establishing irrigated cropland have had minimal success because the supply of water for irrigation is limited and unreliable.

In 1986, an agreement to settle water rights issues associated with the Ute Mountain Indian Reservation was signed between the U. S. Government and the local Dolores Water Conservation District and Ute Mountain Tribe. The agreement satisfied both Indian and non-Indian water needs, and once construction of the McPhee Reservoir on the Dolores River and the Towaoc Canal was completed, water was delivered to the newly developed cropland on the south side of Ute Mountain. The first water was delivered to the project in 1995.

Today, the Ute Mountain Farm and Ranch Enterprises manage the 7,800 acres of irrigated cropland under 110 center-pivot sprinklers. By utilizing the most current levels of technology, from computer control of the center pivots to variable-rate application of herbicides and fertilizers, the Tribe has achieved consistently high yields and conservation of the soil and water resources.

Major crops consist of corn, alfalfa hay, and wheat. Additional crops are triticale for grain or winter cattle pasture, garbanzo beans, and sweet corn for the consumer market. Yields consistently average near the top for crops grown in the area. In 2000, alfalfa yields averaged 6.5 tons per acre over the 4,000 acres harvested. Many fields are producing yields near 7.5 tons per acre, and some yields approach 8.5 tons of alfalfa hay (fig. 10).

Corn yields have been increasing steadily since the fields were converted from desert rangeland. In 2001, corn yields for the 750 acres of corn averaged 208 bushels per acre. During 2003, a field yielding 305.63 bushels per acre was recognized by the National Corn Growers Association as the top-producing field in Colorado and second in the nation for no-till/strip-till corn. The Tribe achieved this record yield using their standard management practices of variable rate fertilizer and herbicide applications, along with reservoir tillage to control irrigation runoff.

Hydric Soils

In this section, hydric soils are defined and described, and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin et al., 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper

Figure 10.—Alfalfa hay is harvested from Mariano very fine sandy loam, 1 to 3 percent slopes.

part (Federal Register, 1995). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2003) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 1998).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

The following map units meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses;

however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1998).

35 Fluvents-Fluvaqents complex, 0 to 3 percent slopes
76 Pogo loam, 0 to 2 percent slopes

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 5. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

Ecological Sites and Characteristic Native Vegetation

In areas that have similar climate and topography, differences in the kind and amount of rangeland and forest understory vegetation, and the tree species are closely related to the kind of soil. Effective management is based upon the relationship between the soils and vegetation and water.

Table 6 shows, for each soil, the ecological site; the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic native vegetation; the average percentage of each species for rangeland and for forest understory vegetation; and common trees and their site index. An explanation of the column headings in table 6 follows.

An *ecological site* is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of the site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Total production is the amount of dry-weight vegetation that can be expected to grow annually in a well managed area that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percentage of air-dry moisture content.

Characteristic native vegetation—the grasses, forbs, and shrubs that make up most of the potential natural plant community on each soil—is listed by common name. Under *composition*, the expected percentage of the total annual production of rangeland and forest understory vegetation is given for each species making up the characteristic native vegetation. The amount that can be used as forage depends upon the kinds of grazing animals and on the grazing season.

Common trees are those tree species that naturally occur on a soil. The potential productivity is expressed as *site index*. The site index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Rangeland Management

By Stephen O. Myers, Natural Resources Conservation Service

Rangeland is a kind of land on which the historic climax vegetation is predominantly grasses, grasslike plants, forbs, or shrubs. Rangeland includes land revegetated naturally or artificially to provide a plant cover that is managed as though it were native vegetation. Rangeland includes natural grasslands, savannas, shrublands, most deserts, alpine plant communities, and wet meadows.

Rangelands provide numerous products and have many values. They are a primary source of forage for domestic livestock and wildlife. They provide water for domestic, urban, rural, industrial, and agricultural uses. They provide wildlife habitat,

areas for natural recycling, purification of the air, and carbon sequestration. They offer aesthetic value, provide open space, and serve as buffers for urban areas. They are a vital link in the enhancement of rural social stability and economic vigor.

Rangelands are divided into basic units for inventory, evaluation, and management. These basic units are called ecological sites when they occur on rangeland. An ecological site is a distinctive kind of land with specific physical characteristics. It differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation. Ecologic sites are separated based on the following criteria: significant differences in the plant species or plant species groups that are in the characteristic plant community; significant differences in the relative proportion of plant species or plant species groups present in the characteristic plant community; significant differences in the total annual production of the characteristic plant community; and soil factors that determine plant production and composition, the hydrology of the site, and the functioning of the water cycle, mineral cycles, and energy flow.

Ecological sites are the result of all of the environmental factors responsible for their development. Each site has a set of key characteristics that are included in the site description. Ecological sites have characteristic soils that have developed over time. The factors that affect soil development are parent material, climate, living organisms, topography, and landscape position. Ecological sites have a characteristic hydrology, particularly infiltration and runoff, which is influenced by the soil and plant community. Most ecological sites have developed under a characteristic type of grazing and browsing use. The kinds and numbers of grazing and browsing animals, seasons of use, and intensity of use influence the vegetation and soil, which in turn influences the hydrology. Ecological sites have also developed under a characteristic fire regime. The frequency and intensity of wildfires contributed to the characteristic plant community.

The plant community for an ecological site is dynamic. Changes in the environment, in various uses, and in stress levels cause changes in the kinds, proportions, and amounts of species in a plant community. Climatic cycles, wildfire, prescribed burning, insects, grazing, and physical disturbances are some of the factors that can cause plant communities to change. Some changes may be temporary, whereas others are long term. Under extreme circumstances, changes may cross a threshold, or “point of no return.” This results in a permanent change in the ecological potential for the plant community.

This survey area contains four distinct plant zones—the salt desert, mesas, foothills, and mountain. The salt desert zone runs along the southern boundary of the survey area, and south and west of the Sleeping Ute Mountain. It covers approximately forty percent of the survey area and is characterized by saltier soils, lower precipitation, low forage production, and elevations ranging from 4,600 to 5,700 feet. The salt desert supports salt-tolerant shrubs, such as mat saltbush, Gardner’s saltbush, four wing saltbush, shadscale, and Nuttall’s saltbush. Forbs include tufted evening primrose, scarlet globemallow, and Sego lily. Grasses of the salt desert zone include Indian ricegrass, alkali sacaton, and galleta.

The mesa zone occurs as a deeply dissected plateau covering approximately forty percent of the survey area. This zone is located on the eastern side of the survey area and is characterized by red soils, higher annual precipitation, and elevations that range from 5,700 to 7,800 feet (fig. 11). The mesa zone supports a plant community dominated by twoneedle pinyon pine, Utah juniper, cliff fendlerbush, true mountainmahogany, Wyoming big sagebrush, black sagebrush, and rubber rabbitbrush. Throughout the mesa zone, understory vegetation is not abundant. The understory vegetation is primarily muttongrass, galleta, Indian ricegrass, western wheatgrass, prairie junegrass, and rock goldenrod.

The foothill zone occupies the lower slopes around the base of Sleeping Ute

Mountain. This zone is characterized by red soils, higher precipitation than the adjacent salt desert, and elevations ranging from 5,600 to 7,400 feet. The plant community is dominated by twoneedle pinyon pine, Utah juniper, true mountainmahogany, Stansbury cliffrose, antelope bitterbrush, muttongrass, and galleta. Where this zone transitions into the mountain zone, there is an increase in the occurrence of Gambel oak and common snowberry, and an occasional serviceberry can be found.

The mountain zone is characterized by brown soils, higher precipitation than the foothills zone, and elevations ranging from 7,200 to 10,000 feet. The higher annual precipitation and cooler temperatures support the establishment of both grassland and woodland plant communities. Common understory plants include Arizona fescue, nodding brome, and Letterman's needlegrass. Woody plant species include scattered pinyon pine, Utah juniper, and ponderosa pine. In some areas, there are dense stands of Gambel oakbrush, common snowberry, and serviceberry. In other areas, stands of aspen and Douglas fir occur.

The objective of range management is to manage grazing so that the plants growing on a site are about the same in kinds and amounts as the potential natural plant community for the site. This management generally results in the optimum production of vegetation, management of brush species, conservation of water, and control of soil erosion.

Recreation

The soils of the survey area are rated in tables 7a and 7b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low

Figure 11.— Alkali Flat range site is in a typical area of Salamander very fine sandy loam, Decorock-Salamander association, 1 to 50 percent slopes. Sleeping Ute Mountain is in the background.

maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in tables 7a and 7b can be supplemented by other information in this survey; for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

In table 7a, *camp areas* require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the

playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

In table 7b, *paths and trails* for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading “Soil Properties.”

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations.

Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 8a and 8b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

In table 8a, *dwellings* are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), gypsum content, and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and

do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), gypsum content, and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

In table 8b, *local roads and streets* have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 9a and 9b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special

design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

In table 9a, *septic tank absorption fields* are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Groundwater contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

In table 9b, a *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of groundwater pollution. Slope affects construction of the trenches and the

movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Tables 10a and 10b give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

In table 10a, *sand* and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 10a, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The

properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

The soils are rated *good, fair,* or *poor* as potential sources of topsoil, reclamation material, and roadfill. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

In table 10b, *topsoil* is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of

excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Water Management

Table 11 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; constructing grassed waterways and surface drains; constructing terraces and diversions; and tile drains and underground outlets. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

In table 11, *pond reservoir areas* hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a groundwater aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics. These results are reported in table 12.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 12 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter

are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 13 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 13, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$- or $^1/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Saturated hydraulic conductivity refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic

conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in micrometers per second (um/sec), when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 13, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 13 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.

3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.

5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.

6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.

7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.

8. Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by

adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

Chemical Properties

Table 14 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio (SAR) is a measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration. Soils that have SAR values of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

Water Features

Table 15 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 15 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 15 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not

probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 16 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete

in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Physical and Chemical Analysis of Selected Soils

Laboratory analyses of several pedons in the survey area are available from the National Soil Survey Laboratory, Lincoln, Nebraska, via the internet at http://www.nrcs.usda.gov. Following is a list of series sampled from the Ute Mountain Area.

Sampled as Series	Lab Sample	Map Unit	Published Series
Salamander	S99CO-83-001	26	Salamander
Cornmeal	S99CO-83-002	19	Chimrock
Yogovuci	S99CO-83-003	132	Yogovuci
Taqoci	S99CO-83-004	132	Toqoci
Kava	S99CO-83-005	25	Cowboy
Mariano	S99CO-83-006	59	Mariano
Gypsy	S99CO-83-007	38	Gypsey
Cowboy	S99CO-83-008	23	Cowboy
Fruita	S99CO-83-009	20	Chimrock

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 17 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Alfisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Ustalf (*Ust*, meaning burnt, hot summers, plus *alf*, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Haplustalfs (*Hapl*, meaning minimal horizonation, plus *ustalf*, the suborder of the Alfisols that has a ustic moisture regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Haplustalfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, active, mesic Typic Haplustalfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in

the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 2003). Unless otherwise indicated, colors in the descriptions are for dry soil. Following the pedon description is the range of important characteristics of the soils in the series.

Arabrab Series

Depth class: very shallow to shallow
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: mesas
Parent material: eolian material and residuum derived from sandstone
Elevation: 6,800 to 7,800 feet
Slope: 3 to 15 percent

Climatic data:
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 130 to 150 days

Taxonomic class: Loamy, mixed, superactive, mesic Lithic Haplustalfs

Typical Pedon

Arabrab loamy sand, in an area of Arabrab-Longburn complex, 3 to 15 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Moccasin Mesa topographic quadrangle, 37 degrees 11 minutes 34 seconds north latitude and 108 degrees 31 minutes 10 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 5 percent gravel.

A—0 to 4 inches; brown (7.5YR 5/3) loamy sand, dark brown (7.5YR 3/2) moist; weak fine granular; soft, very friable, nonsticky, nonplastic; common very fine roots throughout; noneffervescent; slightly alkaline (pH 7.6); abrupt smooth boundary.
Bt1—4 to 9 inches; strong brown (7.5YR 5/6) loam, brown (7.5YR 5/4) moist; weak coarse subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; common coarse roots throughout; common very fine discontinuous tubular pores; few faint patchy clay films on faces of peds and in pores; noneffervescent; slightly alkaline (pH 7.6); clear smooth boundary.
Bt2—9 to 13 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; weak fine subangular blocky structure; hard, firm, slightly sticky, moderately plastic; common coarse roots throughout; common very fine discontinuous tubular pores; common faint discontinuous clay films on faces of peds and in pores; noneffervescent; slightly alkaline (pH 7.6); clear smooth boundary.
Btk—13 to 16 inches; brown (7.5YR 4/4) clay loam, brown (7.5YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common medium roots throughout; common very fine discontinuous tubular pores; few faint patchy clay films on faces of peds and in pores; violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.
2R—16 inches; hard Cliffhouse sandstone.

Range in Characteristics

Soil moisture: typic ustic
Mean annual soil temperature: 48 to 53 degrees F

Depth to restrictive feature: 6 to 20 inches to bedrock (lithic)
Depth to lithic contact: 6 to 20 inches
Surface fragments: 0 to 75 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 30 percent

A horizon:
Hue: 5YR to 10YR
Value: 4 or 5 dry; 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: loamy sand
Clay content: 5 to 15 percent
Fragments: 0 to 75 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 7.8

Bt horizon:
Hue: 5YR to 10YR
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 3 to 6
Texture, fine earth fraction: loam, clay loam or sandy clay loam
Clay content: 18 to 35 percent
Fragments: 5 to 30 percent
Calcium carbonate equivalent: 0 to 2 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 8.4

Btk horizon:
Hue: 5YR to 10YR
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 3 to 6
Texture, fine earth fraction: sandy clay loam, clay loam or loam
Clay content: 18 to 35 percent
Fragments: 5 to 30 percent gravel
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 percent
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 8.4

Archuleta Series

Depth class: shallow
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: canyon
Parent material: residuum derived from sandstone and shale
Elevation: 7,100 to 8,500 feet
Slope: 6 to 80 percent

Climatic data:
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F
Frost-free period: 80 to 100 days

Taxonomic class: Loamy, mixed, superactive, frigid, shallow Typic Haplustepts

Typical Pedon

Archuleta very stony sandy loam, in an area of Sheek-Archuleta-Rock outcrop complex, 25 to 80 percent slopes, from the adjoining Cortez Soil Survey Area, USGS Mancos topographic quadrangle, 37 degrees 19 minutes 12 seconds north latitude, 108 degrees, 15 minutes 4 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Oi—0 to 1 inch; slightly decomposed leaves and twigs; abrupt smooth boundary.

A—1 inch to 6 inches; grayish brown (10YR 5/2) very stony sandy loam, very dark grayish brown (10YR 3/2) moist; moderate medium granular structure parting to moderate fine granular; soft, very friable, nonsticky, nonplastic; 10 percent gravel, 15 percent cobbles, and 5 percent stones; slightly acid (pH 6.5); clear wavy boundary.

Bw1—6 to 9 inches; light brownish gray (10YR 6/2) stony sandy loam, dark grayish brown (10YR 4/2) moist; moderate fine subangular blocky structure parting to moderate medium granular; soft, very friable, nonsticky, nonplastic; 10 percent gravel, 5 percent cobbles, and 10 percent stones; neutral (pH 6.6); gradual wavy boundary.

Bw2—9 to 18 inches; light brownish gray (10YR 6/2) stony clay loam, grayish brown (10YR 5/2) moist; moderate medium subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; 10 percent gravel, 5 percent cobbles, and 10 percent stones; neutral (pH 6.8); gradual irregular boundary

Cr—18 inches; interbedded sandstone and shale.

Range in Characteristics

Soil moisture: typic ustic
Mean annual soil temperature: 45 to 49 degrees F
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Surface fragments: 0 to 50 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 35 percent

A horizon:
Hue: 10YR to 2.5Y
Value: 5 to 7 dry; 3 to 6 moist
Chroma: 1 to 4
Texture, fine earth fraction: sandy loam
Clay content: 10 to 20 percent
Fragments: 35 to 60 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.8

Bw horizon:
Hue: 10YR to 2.5Y

Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: sandy loam, sandy clay loam or clay loam
Clay content: 18 to 35 percent
Fragments: 15 to 35 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.8

Atlatl Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: mesas
Parent material: eolian material, slope alluvium and residuum derived from sandstone and siltstone
Elevation: 6,200 to 7,400 feet
Slope: 1 to 15 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Coarse-loamy, carbonatic, mesic Aridic Calciustepts

Typical Pedon

Atlatl gravelly fine sandy loam, in an area of Wetherill-Atlatl association, 1 to 15 percent slopes, from the adjoining Shiprock Soil Survey Area; USGS Palmer Mesa New Mexico topographic quadrangle; 36 degrees 59 minutes 26 seconds north latitude and 108 degrees 33 minutes 17 seconds west latitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 3 percent gravel.

A—0 to 2 inches; brown (7.5YR 5/4) gravelly fine sandy loam, brown (7.5YR 4/4) moist; moderate medium platy structure parting to moderate fine granular; soft, very friable, slightly sticky, nonplastic; few very fine roots; few very fine vesicular pores; soil surface has a patchy black cryptogam crust; 10 percent fine gravel and 5 percent channers; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bk1—2 to 8 inches; light brown (7.5YR 6/4) fine sandy loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; few coarse and medium, many fine, and common very fine roots; few very fine continuous tubular pores; 5 percent paragravel; 5 percent fine gravel and 5 percent channers; violently effervescent, secondary calcium carbonates segregated in very few fine irregularly shaped accumulations on undersides of rock fragments; moderately alkaline (pH 8.2); clear smooth boundary.

Bk2—8 to 17 inches; light brown (7.5YR 6/4) fine sandy loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, nonplastic; common coarse and fine and few medium and very fine roots; few very fine continuous tubular pores; 25 percent paragravel; 5 percent

channers and 5 percent flagstones; violently effervescent, secondary calcium carbonates segregated in few fine irregularly shaped accumulations around rock fragments; moderately alkaline (pH 8.2); clear wavy boundary.

2Bk3—17 to 23 inches; very pale brown (10YR 7/3) loam, light yellowish brown (10YR 6/4) moist; weak very thick platy structure; slightly hard, friable, slightly sticky, nonplastic; few coarse and very fine and common fine roots; few very fine discontinuous tubular pores; 5 percent paragravel; 5 percent channers; violently effervescent, matrix is impregnated with secondary calcium carbonates; moderately alkaline (pH 8.4); clear smooth boundary.

2Bk4—23 to 30 inches; white (10YR 8/1) loam, very pale brown (10YR 7/3) moist; weak thick platy structure; hard, firm, slightly sticky, nonplastic; few coarse to very fine roots; few very fine discontinuous tubular pores; 5 percent paragravel; 5 percent channers; violently effervescent, matrix is impregnated and partially cemented in places with secondary calcium carbonates; moderately alkaline (pH 8.4); abrupt smooth boundary.

2R—30 inches; sandstone bedrock.

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 48 to 52 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to calcic horizon: 2 to 4 inches
Surface fragments: 0 to 15 percent

Particle-size control section (weighted average):
Clay content: 10 to 18 percent
Rock fragment content: 5 to 15 percent

A horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry; 3 or 5 moist
Chroma: 4
Texture, fine earth fraction: fine sandy loam
Clay content: 10 to 18 percent
Fragments: 0 to 25 percent, mainly gravel
Calcium carbonate equivalent: 10 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 1 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.9 to 8.4

Bk horizon:
Hue: 7.5YR to 10YR
Value: 5 to 8 dry; 4 to 7 moist
Chroma: 2 or 4
Texture, fine earth fraction: fine sandy loam or loam
Clay content: 10 to 20 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 15 to 90 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 1 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.9 to 8.4

Awitava Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: fan remnants
Parent material: eolian material over alluvium derived from diorite
Elevation: 5,400 to 6,200 feet
Slope: 3 to 9 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Loamy-skeletal, mixed, active, mesic Petronodic Haplocalcids

Typical Pedon

Awitava extremely gravelly very fine sandy loam, 3 to 9 percent slopes; USGS Bowdish Canyon topographic quadrangle; 37 degrees 16 minutes 16.99 seconds north latitude and 108 degrees 52 minutes 57.32 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 60 percent gravel, 10 percent cobbles, 1 percent stones.

A1—0 to1 inch; brown (7.5YR 5/4), extremely gravelly very fine sandy loam, brown (7.5YR4/4), moist; weak very fine granular structure; slightly hard, friable, nonsticky, nonplastic; 50 percent gravel, 10 percent cobbles, and 1 percent stones; slightly effervescent; moderately alkaline, (pH 8.2); clear smooth boundary.

A2—1 inch to 4 inches; brown (7.5YR 5/4), gravelly very fine sandy loam, brown (7.5YR 4/4), moist; weak fine granular structure; slightly hard, friable, nonsticky, nonplastic; common medium roots and many very fine roots throughout; 3 percent fine spherical carbonate masses throughout; 20 percent gravel, 5 percent cobbles, and 1 percent stones; strongly effervescent; moderately alkaline, (pH 8.2); gradual smooth boundary

Bk1—4 to 10 inches; light brown (7.5YR 6/3), very gravelly loam, brown (7.5YR 5/4), moist; weak fine granular structure; slightly hard, friable, slightly sticky, nonplastic; common medium roots and many very fine roots throughout; 50 percent fine spherical carbonate masses throughout; 40 percent gravel, 10 percent cobbles, and 1 percent stones; violently effervescent; moderately alkaline, (pH 8.4); abrupt wavy boundary.

Bk2—10 to 21 inches; white (7.5YR 8/1) fractured petrocalcic horizon, pinkish white (7.5YR 8/2) moist; massive; very firm, hard, nonsticky and nonplastic; 15 percent white (7.5YR 8/1) sandy loam in the cracks, pinkish white (7.5YR 8/2) moist; very few fine roots in cracks; common vertical cracks, 1 to 5 mm wide, spaced 5 to 10 cm apart; 52 percent calcium carbonate; imbedded in the petrocalcic fragments is 50 percent gravel, 15 percent cobbles, and 1 percent stones; very strongly cemented; the tops of the petrocalcic fragments have troweled surfaces; violently effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

Bk3—21 to 65 inches; pinkish gray (7.5YR 7/2), extremely gravelly sandy loam, light brown (7.5YR 6/3), moist; single grain; loose, loose, slightly sticky, nonplastic; very few fine roots throughout and very few very fine roots throughout; 100 percent fine carbonate masses throughout; 50 percent gravel, 15 percent

cobbles, and 1 percent stones; violently effervescent; moderately alkaline, (pH 8.4), gradual wavy boundary.

BC—65 to 80 inches; light brown (7.5YR 6/4), extremely gravelly sandy loam, brown (7.5YR 5/4), moist; massive; slightly hard, friable, nonsticky, nonplastic; carbonate concretions on bottom of rock fragments; 65 percent gravel, 5 percent cobbles, and 1 percent stones; slightly effervescent; moderately alkaline, (pH 8.2).

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Depth to calcic horizon: 2 to 10 inches
Surface fragments: 15 to 80 percent gravel, mainly gravel and cobble

Particle-size control section (weighted average):
Clay content: 10 to 20 percent
Rock fragment content: 35 to 80 percent

A horizons:
Hue: 7.5YR
Value: 4 or 5 wet or dry
Chroma: 3 or 4
Texture, fine earth fraction: very fine sandy loam
Clay content: 10 to 20 percent
Fragments: 15 to 70 percent, mainly gravel and cobble
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 2
Reaction: pH 7.9 to 8.4

Bk1 horizon:
Hue: 7.5YR
Value: 5 or 6 wet or dry
Chroma: 3 or 4
Texture, fine earth fraction: loam or sandy loam
Clay content: 10 to 20 percent
Fragments: 35 to 70 percent, mainly gravel and cobble
Calcium carbonate equivalent: 15 to 50 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 2
Reaction: pH 7.9 to 8.4

Bk2 horizon:
Hue: 7.5YR
Value: 7 or 8 wet or dry
Chroma: 1 or 2
Texture, fine earth fraction: sandy loam and loam in cracks of strongly cemented fractured petrocalcic material
Cementing agent: calcium carbonate
Clay content: 10 to 20 percent
Fragments: 35 to 80 percent, mainly gravel and cobble
Calcium carbonate equivalent: 40 to 80 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm

Sodium adsorption ratio: 0 to 2
Reaction: pH 7.9 to 8.4

Bk3 or BC horizon:
Hue: 7.5YR
Value: 6 or 7 wet or dry
Chroma: 2 to 4
Texture, fine earth fraction: loam or sandy loam
Clay content: 10 to 20 percent
Fragments: 35 to 80 percent, mainly diorite gravel and cobble
Gypsum content: 0 to 1 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 2
Reaction: pH 7.9 to 8.4

Barx Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: mesas
Parent material: eolian material derived from sandstone
Elevation: 5,400 to 6,200 feet
Slope: 1 to 12 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Fine-loamy, mixed, superactive, mesic Ustic Calciargids

Typical Pedon

Barx loam, 3 to 6 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Negro Canyon topographic quadrangle; 37 degrees 27 minutes 54 seconds north latitude and 108 degrees 58 minutes 50 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 3 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak very coarse platy structure; soft, very friable, nonsticky and nonplastic; few very fine roots throughout; neutral (pH 7.2); abrupt smooth boundary.

Bt1—3 to 6 inches; reddish brown (5YR 5/4) sandy clay loam, reddish brown (5YR 4/4) moist; weak fine angular blocky structure; hard, very friable, slightly sticky, moderately plastic; common very fine roots throughout; few very fine discontinuous tubular pores; clay bridging between sand grains; neutral (pH 7.2); clear smooth boundary.

Bt2—6 to 20 inches; yellowish red (5YR 5/6) sandy clay loam, yellowish red (5YR 4/6), moist; weak fine angular blocky structure; slightly hard, very friable, slightly sticky, moderately plastic; few very fine and fine roots throughout; few very fine discontinuous tubular pores; many faint continuous clay films on faces of peds and in pores; slightly alkaline (pH 7.6); gradual smooth boundary.

Btk—20 to 31 inches; yellowish red (5YR 5/6) sandy clay loam, yellowish red (5YR 4/6), moist; weak medium angular blocky structure parting to weak fine angular blocky; slightly hard, very friable, slightly sticky, moderately plastic; few very fine

roots throughout; few very fine discontinuous tubular pores; clay bridging between sand grains; common fine carbonate threads throughout; strongly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Bk—31 to 60 inches; pinkish white (7.5YR 8/2) sandy clay loam, light brown (7.5YR 6/4), moist; weak medium angular blocky and weak fine angular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; 23 percent calcium carbonate equivalent; many coarse irregular soft masses of carbonate throughout; strongly effervescent; moderately alkaline (pH 8.4).

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 50 to 52 degrees F
Depth to calcic horizon: 12 to 39 inches
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 5YR to 7.5YR
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 3 to 5
Texture, fine earth fraction: very fine sandy loam, loam or fine sandy loam
Clay content: 10 to 20 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 0 to 2 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 6.6 to 8.4

Bt horizon:
Hue: 5YR to 7.5YR
Value: 4 to 7 dry; 3 to 6 moist
Chroma: 3 to 6
Texture, fine earth fraction: sandy clay loam, loam or clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 6.6 to 8.4

Btk or Bk horizon:
Hue: 5YR to 7.5YR
Value: 5 to 8 dry; 4 to 8 moist
Chroma: 2 to 6
Texture, fine earth fraction: loam, sandy clay loam or clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 15 to 40 percent
Gypsum content: 0 percent

Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 9.0

Battlerock Series

Local phase: moderately saline, sodic; slightly saline, sodic
Depth class: very deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: drainageways, flood plains
Parent material: alluvium derived from sandstone and shale
Elevation: 4,800 to 5,700 feet
Slope: 0 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-loamy, mixed, superactive, calcareous, mesic Typic Torrifluvents

Typical Pedon

Battlerock silty clay loam, slightly saline, sodic, 1 to 3 percent slopes; USGS Sentinel Peak Southeast topographic quadrangle; 37 degrees 2 minutes 2 seconds north latitude and 108 degrees 45 minutes 14 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 2 percent gravel.

A1—0 to 3 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; weak very fine granular structure; soft, very friable, slightly sticky, nonplastic; 1 percent gravel; violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

A2—3 to 6 inches; brown (10YR 5/3) clay loam, brown (10YR 5/3) moist; weak very thick platy structure parting to weak fine platy structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots throughout; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C—6 to 16 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; moderately hard, very friable, slightly sticky, slightly plastic; common very fine roots throughout; common very fine discontinuous tubular pores; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Cy1—16 to 31 inches; pale brown (10YR 6/3) silty clay loam, light olive brown (2.5Y 5/3) moist; massive; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots throughout; common very fine discontinuous tubular pores; 2 percent fine irregular gypsum threads; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Cy2—31 to 51 inches; light yellowish brown (2.5Y 6/3) silty clay loam, light olive brown (2.5Y 5/3) moist; massive; moderately hard, very friable, moderately sticky, moderately plastic; 2 percent fine irregular gypsum threads; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Cy3—51 to 80 inches; light yellowish brown (2.5Y 6/3) clay loam, light olive brown (2.5Y 5/3) moist; massive; very hard, friable, slightly sticky, moderately plastic; few fine roots throughout; 2 percent fine irregular gypsum threads; violently effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 12 to 60 inches to salt accumulations
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 10 percent

A horizon:
Hue: 7.5YR to 2.5Y
Value: 5 to 7 dry; 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: silty clay loam, clay loam, or silt loam
Clay content: 10 to 40 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 0 to 20 percent
Gypsum content: 0 to 2 percent
Electrical conductivity: 0 to 16 mmhos/cm
Sodium adsorption ratio: 0 to 13
Reaction: pH 7.4 to 9.0

C horizon:
Hue: 7.5YR to 2.5Y
Value: 5 to 7 dry; 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: stratified loam, silty clay loam, clay loam or silt loam
Clay content: 10 to 40 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 1 to 20 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 0 to 16 mmhos/cm
Sodium adsorption ratio: 0 to 30
Reaction: pH 7.4 to 9.0

Bebeevar Series

Depth class: very deep
Drainage class: moderately well
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Landform: flood plains
Parent material: alluvium derived from mixed sources
Elevation: 4,600 to 5,700 feet
Slope: 0 to 2 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Sandy, mixed, mesic Oxyaquic Torrifluvents

Typical Pedon

Bebeevar loamy sand, in an area of Bebeevar-Walrees complex, 0 to 2 percent slopes, from the adjoining Shiprock Soil Survey Area; USGS Shiprock, New Mexico topographic quadrangle; 36 degrees 46 minutes 18 seconds north latitude and 108 degrees 37 minutes 50 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 5 percent gravel, 1 percent cobbles.

AC—0 to 4 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 4/3) moist; weak medium platy structure parting to weak fine granular; soft, very friable, slightly sticky, nonplastic; few fine and very fine roots; few very fine vesicular pores; few thin lenses of fine sandy loam; slightly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

C1—4 to 13 inches; pale brown (10YR 6/3) loamy fine sand, brown (10YR 5/3) moist; few fine faint dark yellowish brown (10YR 4/4) redox concentrations; massive; soft, very friable, slightly sticky, nonplastic; few medium, common fine, and few very fine roots; few very fine discontinuous tubular pores; 5 percent gravel; few thin lenses of fine sandy loam; slightly effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.

C2—13 to 28 inches; pale brown (10YR 6/3) gravelly coarse sand, brown (10YR 4/3) moist; few fine faint dark yellowish brown (10YR 4/4) redox concentrations; single grain; loose, nonsticky, nonplastic; few fine and very fine roots; one thin stratum of fine sandy loam with common fine distinct dark yellowish brown (10YR 4/6) redox concentrations; 25 percent gravel; very slightly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

C3—28 to 36 inches; pale brown (10YR 6/3) very gravelly coarse sand, brown (10YR 4/3) moist; few fine faint dark yellowish brown (10YR 4/4) redox concentrations; single grain; loose, nonsticky, nonplastic; few medium and very fine roots; 40 percent gravel and 10 percent cobbles; very slightly effervescent; mildly alkaline (pH 7.8); abrupt wavy boundary.

C4—36 to 70 inches; light brownish gray (10YR 6/2) sand, dark grayish brown (10YR 4/2) moist; few fine faint dark yellowish brown (10YR 4/4) redox concentrations; single grain; loose, nonsticky, nonplastic; few fine roots; few strata of gravelly coarse sand; 5 percent gravel; very slightly effervescent; mildly alkaline (pH 7.8).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 57 degrees F
Surface fragments: 0 to 15 percent
Seasonal high water table: May to October, 36 to 60 inches

Particle-size control section (weighted average):
Clay content: 2 to 10 percent
Rock fragment content: 0 to 35 percent

A horizon:
Hue: 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: loamy sand
Clay content: 2 to 8 percent
Fragments: 0 to 15 percent

Calcium carbonate equivalent: 1 to 3 percent
Gypsum content: 0 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

C horizon:
Hue: 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: stratified coarse sand to very fine sandy loam
Clay content: 2 to 10 percent
Fragments: 0 to 55 percent, mainly gravel
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

Beclabito Series

Depth class: deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: mesas, structural benches
Parent material: slope alluvium and residuum derived from sandstone and shale
Elevation: 5,400 to 6,200 feet
Slope: 1 to 5 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Fine-loamy, mixed, active, mesic Haplic Ustic Natrargids

Typical Pedon

Beclabito fine sandy loam, in an area of Farview-Beclabito-Rock outcrop complex, 1 to 10 percent slopes, from the adjoining Shiprock Soil Survey Area; USGS Rocky Point, New Mexico topographic quadrangle; 36 degrees 50 minutes 53 seconds north latitude and 108 degrees 58 minutes 36 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 15 percent gravel and 5 percent cobbles.

A—0 to 4 inches; brown (7.5YR 5/4) fine sandy loam, brown (7.5YR 4/4) moist; moderate medium platy structure parting to weak fine granular; soft, very friable, slightly sticky, nonplastic; few fine and common very fine roots; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Btk—4 to 14 inches; strong brown (7.5YR 5/6) fine sandy loam, strong brown (7.5YR 4/6) moist; moderate medium prismatic structure parting to weak coarse subangular blocky; hard, firm, slightly sticky, slightly plastic; common fine and very fine roots; few very fine tubular pores; common thin clay films on faces of peds, lining pores, and bridging sand grains; strongly effervescent, secondary calcium carbonates segregated in few fine irregularly shaped accumulations on faces of peds; strongly alkaline (pH 8.6); clear smooth boundary.

Btkn1—14 to 23 inches; light brown (7.5YR 6/4) with pinkish white (7.5YR 8/2) sandy clay loam, strong brown (7.5YR 4/6) with light brown (7.5YR 6/4) moist; weak medium prismatic structure parting to moderate coarse subangular blocky; very hard, very firm, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine tubular pores; few thin clay films on faces of peds and bridging sand grains; violently effervescent, secondary calcium carbonates segregated in common medium and large irregularly shaped accumulations in soft masses and on faces of peds; strongly alkaline (pH 8.8); clear irregular boundary.

Btkn2—23 to 36 inches; strong brown (7.5YR 5/6) sandy clay loam, strong brown (7.5YR 4/6) moist; moderate medium prismatic structure parting to moderate coarse subangular blocky; very hard, very firm, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine tubular pores; few thin clay films on faces of peds, lining pores, and bridging sand grains; strongly effervescent, secondary calcium carbonates segregated in few medium irregularly shaped accumulations on faces of peds; strongly alkaline (pH 9.0); abrupt wavy boundary.

2Bkn1—36 to 45 inches; very pale brown (10YR 7/4) sandy clay loam, yellowish brown (10YR 5/4) moist; moderate coarse subangular blocky structure; hard, firm, slightly sticky, slightly plastic; few fine and very fine roots; few very fine tubular pores; 10 percent sandstone paragravel and 5 percent shale paragravel; 5 percent channers; violently effervescent, secondary calcium carbonates segregated in few fine and medium irregularly shaped accumulations on faces of peds and on rock fragments; strongly alkaline (pH 9.0); clear wavy boundary.

2Bkn2—45 to 56 inches; light gray (10YR 7/1) clay loam, gray (10YR 5/1) moist; weak coarse subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; few fine and very fine roots; common very fine tubular pores; 10 percent sandstone paragravel and 10 percent shale paragravel; violently effervescent, secondary calcium carbonates segregated in common, fine and medium, irregularly shaped accumulations on faces of peds and on rock fragments; strongly alkaline (pH 9.0); abrupt wavy boundary.

2R—56 inches; sandstone bedrock.

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Depth to restrictive feature: 40 to 60 inches to bedrock (lithic)
Depth to calcic horizon: 14 to 35 inches
Surface fragments: 0 to 35 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 35 percent

A horizon:
Hue: 5YR to 7.5YR
Value: 5 or 6 dry; 3 or 4 moist
Chroma: 4
Texture, fine earth fraction: fine sandy loam
Clay content: 10 to 18 percent
Fragments: 0 to 60 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm

Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Btn or Btk horizon:
Hue: 5YR to 7.5YR
Value: 5 or 6 dry; 3 to 5 moist
Chroma: 4 to 6
Texture, fine earth fraction: fine sandy loam or sandy clay loam
Clay content: 18 to 30 percent
Fragments: 0 to 25 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 5 to 13
Reaction: pH 8.5 to 9.0

Btkn horizon:
Hue: 5YR to 7.5YR
Value: 5 to 8 dry; 4 to 6 moist
Chroma: 2 to 6
Texture, fine earth fraction: sandy clay loam, sandy loam or clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 35 percent
Calcium carbonate equivalent: 10 to 30 percent
Gypsum content: 0 percent
Electrical conductivity: 4 to 8 mmhos/cm
Sodium adsorption ratio: 5 to 30
Reaction: pH 8.5 to 9.0

Bkn or Bkyn horizon:
Hue: 2.5YR to 5GY
Value: 5 to 8 dry; 4 to 6 moist
Chroma: 1 to 6
Texture, fine earth fraction: sandy clay loam, sandy loam, silty clay loam or clay loam
Clay content: 27 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 5 to 20 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 8 to 16 mmhos/cm
Sodium adsorption ratio: 13 to 30
Reaction: pH 8.5 to 9.0

Benally Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: fan remnants, mesas, plateaus, structural benches
Parent material: slope alluvium, eolian material and residuum derived from sandstone and shale
Elevation: 5,000 to 5,700 feet)
Slope: 1 to 5 percent

Climatic data:
Mean annual precipitation: 8 to 10 inches

Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Natrigypsids

Typical Pedon

Benally fine sandy loam, in an area of Brimhall-Benally-Genats association, 0 to 45 percent slopes, from the adjoining Shiprock Soil Survey Area; USGS Great Bend, New Mexico topographic quadrangle; 36 degrees 10 minutes 28 seconds north latitude and 108 degrees 35 minutes 3 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 1 percent gravel.

A—0 to 1 inch; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; strong coarse platy structure and moderate fine granular; soft, very friable, slightly sticky, slightly plastic; few very fine roots; few very fine vesicular pores; few 0.5-inch-wide cracks; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Btn/E—1 inch to 4 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 5/4) moist; strong medium prismatic structure; very hard, firm, moderately sticky, moderately plastic; few fine and very fine roots; many very fine vertical tubular pores; upper 2 inches of prisms have uncoated sand grains (E part); few 0.5-inch-wide cracks; few thin clay films and clay bridging sand grains on the faces of prisms (Bt part); strongly effervescent; very strongly alkaline (pH 9.4); abrupt smooth boundary.

Btkn—4 to 11 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 5/4) moist; moderate medium prismatic structure parting to moderate coarse blocks; hard, firm, moderately sticky, moderately plastic; few fine and common very fine roots; few very fine irregularly shaped pores; few thin clay films on faces of peds and lining pores; 5 percent gravel; strongly effervescent; secondary calcium carbonates segregated in few fine irregularly shaped soft masses; very strongly alkaline (pH 9.4); clear smooth boundary.

Byn—11 to 19 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; moderate coarse and medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few fine and common very fine roots; few very fine discontinuous interstitial pores; 5 percent gravel; secondary very fine sand-sized gypsum crystals segregated in common fine irregularly shaped soft masses and filaments; strongly effervescent; very strongly alkaline (pH 9.2); clear wavy boundary.

By—19 to 31 inches; very pale brown (10YR 7/3) loam, light yellowish brown (10YR 6/4) moist; weak coarse and moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and very fine roots; few very fine discontinuous interstitial pores; 5 percent gravel secondary very fine sand-sized gypsum crystals segregated in common fine irregularly shaped soft masses and filaments, primary coarse sand-sized gypsum crystals in common fine masses; slightly effervescent; strongly alkaline (pH 8.5); clear wavy boundary.

2BCy—31 to 52 inches; very pale brown (10YR 7/3) channery sandy clay loam, yellowish brown (10YR 5/4) moist; massive, platy rock structure; slightly hard, friable, slightly sticky, slightly plastic; few fine roots; 15 percent soft sandstone and shale fragments; 25 percent channers and 5 percent hard sandstone gravel; secondary very fine sand-sized gypsum crystals segregated in few fine filaments and on the undersides of rock fragments, primary coarse sand-sized gypsum crystals in few fine masses; slightly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

2Cr—52 inches; soft sandstone bedrock.

Range in Characteristics

Soil moisture: typic aridic
Depth to restrictive feature: 40 or more inches to bedrock (paralithic)
Depth to gypsic horizon: 8 to 24 inches
Depth to base of natric horizon: 8 to 24 inches
Surface fragments: 0 to 10 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 10 percent

A horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: fine sandy loam, and loam
Clay content: 18 to 27 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 3 to 5 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 5 to 13
Reaction: pH 7.4 to 8.4

Btn/E horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry; 4 or 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: sandy clay loam or clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 4 to 8 mmhos/cm
Sodium adsorption ratio: 13 to 50
Reaction: pH 7.9 to 9.0

Btkn horizon:
Hue: 7.5YR or 10YR
Value: 5 to 8 dry; 4 to 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam, sandy clay loam, clay loam, or fine sandy loam
Clay content: 18 to 35 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 4 to 8 mmhos/cm
Sodium adsorption ratio: 13 to 50
Reaction: pH 7.9 to 9.0

Byn or By horizon:
Hue: 10YR
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 3 to 6
Texture, fine earth fraction: silty clay loam, sandy clay loam or clay loam

Clay content: 27 to 40 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 3 to 5 percent
Gypsum content: 5 to 10 percent
Electrical conductivity: 16 to 25 mmhos/cm
Sodium adsorption ratio: 30 to 80
Reaction: pH 7.9 to 8.4

Blackston Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: terraces
Parent material: alluvium derived from mixed sources
Elevation: 4,800 to 5,700 feet
Slope: 0 to 2 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Typic Haplocalcids

Typical Pedon

Blackston gravelly sandy loam, in an area of Blackston-Camac-Rock outcrop complex, 0 to 60 percent slopes, from the adjoining Shiprock Area Soil Survey; USGS Shiprock topographic quadrangle; 36 degrees 47 minutes 7 seconds north latitude and 108 degrees 39 minutes 57 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 40 percent gravel, 1 percent cobbles.

A—0 to 3 inches; brown (10YR 5/3) gravelly sandy loam, brown (10YR 4/3) moist; moderate coarse platy structure parting to moderate fine granular; soft, very friable, slightly sticky, nonplastic; common very fine, and fine roots throughout; few fine and very fine vesicular pores; 10 percent gravel and 5 percent cobbles; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bw—3 to 9 inches; light yellowish brown (10YR 6/4) sandy loam, dark yellowish brown (10YR 4/4) moist; moderate coarse subangular blocky structure; soft, very friable, slightly sticky, nonplastic; common very fine and common fine roots throughout; few fine vesicular pores; 2 percent gravel; violently effervescent, few fine irregular carbonate masses on faces of peds; moderately alkaline (pH 8.2); clear smooth boundary.

Bk—9 to 15 inches; pale brown (10YR 6/3) gravelly sandy clay loam, dark yellowish brown (10YR 4/4) moist; strong medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine, common fine, and few medium roots throughout; few fine tubular pores; 25 percent gravel and 5 percent cobbles; violently effervescent, common medium irregular carbonate masses on faces of peds and rock fragments; moderately alkaline (pH 8.2); clear smooth boundary.

2Bk1—15 to 35 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, brown (10YR 4/3) moist; massive; soft, very friable, slightly sticky, nonplastic; common very fine, common fine, and few medium roots throughout; 30 percent gravel and 15 percent cobbles; violently effervescent, common fine and medium

irregular carbonate masses on rock fragments; moderately alkaline (pH 8.4); clear wavy boundary.

2Bk2—35 to 53 inches; pale brown (10YR 6/3) very cobbly loamy coarse sand, brown (10YR 4/3) moist; single grain; loose, nonsticky, nonplastic; common very fine, many fine, and few medium roots throughout; 30 percent gravel, 20 percent cobbles, and 5 percent stones; strongly effervescent, secondary calcium carbonates segregated as common coarse irregularly shaped accumulations on rock fragments; moderately alkaline (pH 8.4); clear wavy boundary.

2C—53 to 70 inches; light brownish gray (10YR 6/2) very cobbly coarse sand, brown (10YR 4/3) moist; single grain; loose, nonsticky, nonplastic; few very fine and fine roots; 35 percent gravel, 20 percent cobbles, and 5 percent stones; moderately alkaline (pH 8.4).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to calcic horizon: 7 to 20 inches
Surface fragments: 5 to 60 percent

Particle-size control section (weighted average):
Clay content: 10 to 17 percent
Rock fragment content: 35 to 80 percent

A horizon:
Hue: 5YR to 10YR
Value: 5 or 6 dry; 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: sandy loam
Clay content: 10 to 18 percent
Fragments: 5 to 30 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Bw horizon:
Hue: 5YR to 10YR
Value: 6 or 7 dry; 4 or 5 moist
Chroma: 2 to 6
Texture, fine earth fraction: sandy loam or fine sandy loam
Clay content: 10 to 18 percent
Fragments: 0 to 15 percent gravel
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 5 to 13
Reaction: pH 7.9 to 9.0

Bk horizon:
Hue: 5YR to 10YR
Value: 6 or 7 dry; 4 or 5 moist
Chroma: 2 to 6
Texture, fine earth fraction: sandy clay loam or loam
Clay content: 20 to 35 percent
Fragments: 10 to 30 percent

Calcium carbonate equivalent: 10 to 40 percent
Gypsum content: 0 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 5 to 13
Reaction: pH 7.9 to 9.0

2Bk or 2C horizon:
Hue: 5YR to 10YR
Value: 6 or 7 dry; 4 or 5 moist
Chroma: 2 to 6
Texture, fine earth fraction: loamy coarse sand, coarse sand, or coarse sandy loam
Clay content: 0 to 18 percent
Fragments: 5 to 80 percent
Calcium carbonate equivalent: 1 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Bluechief Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Landform: mesas, structural benches
Parent material: eolian material derived from sandstone
Elevation: 4,800 to 5,700 feet
Slope: 1 to 12 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F degrees
Frost-free period: 135 to 160 days

Taxonomic class: Coarse-loamy, mixed, superactive, mesic Typic Haplocalcids

Typical Pedon

Bluechief fine sandy loam, 1 to 3 percent slopes; USGS Yellow Rock Point topographic quadrangle; 37 degrees 13 minutes 28.70 seconds north latitude and 108 degrees 59 minutes 42.68 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 6 inches; brown (7.5YR 5/4), fine sandy loam, brown (7.5YR 4/3), moist; weak medium granular structure; soft, very friable, nonsticky, nonplastic; 1 percent gravel; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.
Bw1—6 to 12 inches; brown (7.5YR 5/4), fine sandy loam, brown (7.5YR 4/4), moist; weak medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots throughout; common very fine dendritic tubular pores; 1 percent clay bridging on faces of peds; 1 percent gravel; violently effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.
Bw2—12 to 23 inches; brown (7.5YR 5/4), fine sandy loam, brown (7.5YR 4/4), moist; weak medium subangular blocky structure; soft, very friable, nonsticky,

nonplastic; common very fine roots throughout; common very fine dendritic tubular pores; 2 percent clay films on faces of peds and 5 percent clay bridging on faces of peds; 3 percent gravel; violently effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Bk—23 to 29 inches; light brown (7.5YR 6/4), fine sandy loam, brown (7.5YR 5/4), moist; weak medium subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots throughout; common very fine dendritic tubular pores; 2 percent clay films on faces of peds and 5 percent clay bridging on faces of peds; 10 percent gravel; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2R—29 inches; Dakota sandstone.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Depth to calcic horizon: 10 to 25 inches
Surface fragments: none

Particle-size control section (weighted average):
Clay content: 8 to 17 percent
Rock fragment content: 0 to 5 percent

A horizon:
Hue: 5YR or 7.5YR
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 4 to 6
Texture, fine earth fraction: fine sandy loam
Clay content: 5 to 10 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 1 to 2 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.4 to 7.8

Bw horizon:
Hue: 5YR or 7.5YR
Value: 4 to 6 dry; 4 or 5 moist
Chroma: 3 to 6
Texture, fine earth fraction: fine sandy loam or sandy loam
Clay content: 5 to 15 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.9 to 8.4

Bk horizon:
Hue: 5YR or 7.5YR
Value: 6 to 8 dry; 4 to 7 moist
Chroma: 3 to 6
Texture, fine earth fraction: sandy loam or fine sandy loam
Clay content: 10 to 15 percent
Fragments: 0 to 5 percent

Calcium carbonate equivalent: 15 to 40 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Cahona Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: mesas, fan remnant
Parent material: eolian material and reworked eolian derived from sandstone
Elevation: 6,200 to 7,400 feet
Slope: 3 to 9 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Fine-silty, mixed, superactive, mesic Calcidic Haplustalfs

Typical Pedon

Cahona silt loam, in an area of Cahona-Pulpit complex, 3 to 9 percent slopes; USGS Greasewood Canyon, Colorado topographic quadrangle; 37 degrees 5 minutes 42.31 seconds north latitude and 108 degrees 22 minutes 50.67 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A1—0 to 3 inches; reddish brown (5YR 5/3) silt loam, reddish brown (5YR 4/3) moist; moderate fine granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine roots throughout; very slightly effervescent; slightly alkaline (pH 7.8); abrupt smooth boundary.

A2—3 to 7 inches; reddish brown (5YR 5/3) silt loam, reddish brown (5YR 4/3) moist; moderate coarse platy structure; soft, very friable, slightly sticky, slightly plastic; common very fine and common medium roots throughout; many very fine dendritic tubular pores; very slightly effervescent; slightly alkaline (pH 7.8); abrupt smooth boundary.

Bt1—7 to 13 inches; reddish brown (5YR 5/4) silty clay loam, reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and common medium roots throughout; many very fine dendritic tubular pores; 10 percent faint clay films throughout; very slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bt2—13 to 30 inches; reddish brown (5YR 5/4) silty clay loam, reddish brown (5YR 4/4) moist; strong medium angular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine and common medium roots throughout; common very fine dendritic tubular pores; 70 percent distinct clay films throughout; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Btk1—30 to 34 inches; reddish brown (5YR 5/4) and pinkish white (5YR 8/2) silty clay loam, reddish brown (5YR 4/4) and pinkish gray (5YR 7/2) moist; strong medium angular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine roots throughout; common very fine dendritic tubular pores; 90

percent distinct clay films throughout; 10 percent fine distinct irregular carbonate masses on faces of peds; very slightly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Btk2—34 to 45 inches; pinkish white (5YR 8/2) silty clay loam, pinkish gray (5YR 7/2) moist; moderate medium angular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine roots throughout; common very fine dendritic tubular pores; 20 percent distinct clay films throughout; 90 percent fine distinct irregular carbonate masses on faces of peds; violently effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Bk1—45 to 54 inches; pinkish white (5YR 8/2) loam, pinkish gray (5YR 7/2) moist; weak medium angular blocky structure; hard, firm, slightly sticky, slightly plastic; common very fine roots throughout; 100 percent fine distinct irregular carbonate masses throughout; violently effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Bk2—54 to 80 inches; pinkish white (5YR 8/2) loam, pink (5YR 7/3) moist; weak medium subangular blocky structure; very hard, very firm, slightly sticky, slightly plastic; common very fine roots throughout; 10 percent distinct pressure faces throughout; 100 percent fine distinct irregular carbonate masses throughout; violently effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 48 to 52 degrees F
Depth to calcic horizon: 20 to 40 inches
Surface fragments: unspecified

Particle-size control section (weighted average):
- *Clay content:* 18 to 35 percent
- *Rock fragment content:* 0 to 5 percent

A horizon:
- *Hue:* 5YR to 7.5YR
- *Value:* 5 or 6 dry; 4 or 5 moist
- *Chroma:* 2 to 6
- *Texture, fine earth fraction:* loam or silt loam
- *Clay content:* 10 to 20 percent
- *Fragments:* 0 to 5 percent
- *Calcium carbonate equivalent:* 0 to 1 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 6.6 to 7.8

Bt horizon:
- *Hue:* 5YR to 7.5YR
- *Value:* 4 to 7 dry; 3 to 5 moist
- *Chroma:* 3 to 6
- *Texture, fine earth fraction:* clay loam, loam silty clay loam or silt loam
- *Clay content:* 18 to 35 percent
- *Fragments:* 0 to 5 percent
- *Calcium carbonate equivalent:* 1 to 15 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 7.4 to 8.4

Bk horizon:
Hue: 5YR to 7.5YR
Value: 4 to 8 dry; 3 to 6 moist
Chroma: 3 to 6
Texture, fine earth fraction: loam silty clay loam or silt loam
Clay content: 18 to 27 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 15 to 30 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 4
Reaction: pH 7.4 to 8.4

The soils mapped as Cahona in map unit 17 are taxadjuncts to the series. The particle size control section for the Cahona Series is fine-silty. The typical pedon in map unit 17 has a fine-loamy particle size control section because of higher gravel and cobble content. This difference, however, does not significantly affect the use or management of the soils. In this map unit, 17, Cahona soils are fine-loamy, mixed, superactive, mesic Calcidic Haplustalfs.

Cairn Series

Depth class: deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: cuestas, structural benches
Parent material: alluvium over residuum derived from limestone and sandstone
Elevation: 4,800 to 5,700 feet
Slope: 1 to 5 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Loamy-skeletal, carbonatic, mesic Calcic Argigypsids

Typical Pedon

Cairn channery fine sandy loam, in an area Persayo-Cairn-Patel complex, 1 to 25 percent slopes, from the adjoining Shiprock Area Soil Survey; USGS Sallies Springs topographic quadrangle, 36 degrees 56 minutes 38 seconds north latitude and 108 degrees 53 minutes 21 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

A—0 to 2 inches; light brown (7.5YR 6/4) channery fine sandy loam, brown (7.5YR 4/4) moist; moderate very thick platy structure parting to weak fine granular; soft, very friable, slightly sticky, nonplastic; few very fine, and few fine roots throughout; few very fine vesicular pores; 10 percent channers and 5 percent gravel; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Btk—2 to 9 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak medium prismatic structure parting to moderate thick platy; slightly hard, friable, slightly sticky, slightly plastic; common very fine and common fine roots throughout; common very fine tubular pores; common thin clay films on faces of peds and lining pores; 5 percent gravel and 5 percent channers; violently effervescent; few

fine irregular carbonate masses on ped faces and rock fragments; moderately alkaline (pH 8.4); clear wavy boundary.

2Bk—9 to 19 inches; very pale brown (10YR 7/3) very channery loam, light yellowish brown (10YR 6/4) moist; moderate medium platy structure parting to weak medium subangular blocky; slightly hard, friable, slightly sticky, slightly plastic; common very fine and few fine roots throughout; common very fine continuous horizontal pores; 15 percent flagstones, 35 percent channers, and 10 percent gravel; very few fine irregular gypsum pendants on undersides of rock fragments; violently effervescent, many medium irregular carbonate masses on ped faces and rock fragments; moderately alkaline (pH 8.4); clear wavy boundary.

2Cky—19 to 30 inches; very pale brown (10YR 7/4) extremely flaggy gypsiferous coarse sandy loam, yellowish brown (10YR 5/6) moist; massive, platy rock structure; slightly hard, friable, slightly sticky, nonplastic; common very fine and few medium roots throughout; fine earth weakly cemented in places by secondary gypsum crystals; 35 percent flagstones, 30 percent channers, and 5 percent gravel; many medium and large irregular gypsum pendants on undersides of rock fragments; strongly effervescent; mildly alkaline (pH 7.8); gradual wavy boundary.

2Cy—30 to 46 inches; light yellowish brown (10YR 6/4) very channery gypsiferous coarse sandy loam, dark yellowish brown (10YR 4/4) moist; massive, platy rock structure; slightly hard, friable, slightly sticky, nonplastic; few medium and few very fine roots throughout; 35 percent channers, 15 percent flagstones, and 5 percent gravel; common medium irregular gypsum pendants on undersides of rock fragments; strongly effervescent; mildly alkaline (pH 7.8); clear wavy boundary.

2Cr—46 inches; thinly interbedded soft calcareous sandstone and dolomitic limestone bedrock.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: degrees F
Depth to restrictive feature: 40 to 60 inches to bedrock (paralithic)
Depth to calcic horizon: 4 to 10 inches
Depth to gypsic horizon: 10 to 20 inches

Particle-size control section (weighted average):
Clay content: 25 to 35 percent
Rock fragment content: 35 to 60 percent

A horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 4
Texture, fine earth fraction: fine sandy loam
Clay content: 15 to 18 percent
Fragments: 15 to 25 percent, mainly channers
Calcium carbonate equivalent: 15 to 25 percent
Gypsum content: 0 to 2 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Bt or Btk horizon:
Hue: 7.5YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 4
Texture, fine earth fraction: loam or clay loam

Clay content: 25 to 35 percent, mainly channers
Fragments: 5 to 15 percent
Calcium carbonate equivalent: 15 to 25 percent
Gypsum content: 0 to 2 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Bk horizon:
Hue: 7.5YR to 10YR
Value: 6 or 7 dry; 5 to 7 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam
Clay content: 18 to 25 percent
Fragments: 35 to 60 percent, mainly channers
Calcium carbonate equivalent: 40 to 70 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 5 to 13
Reaction: pH 7.9 to 9.0

2Cky or 2Cy horizon:
Hue: 10YR to 2.5Y
Value: 5 to 8 dry; 4 to 6 moist
Chroma: 2 to 6
Texture, fine earth fraction: gypsiferous coarse sandy loam or gypsiferous loam
Clay content: 18 to 25 percent
Fragments: 40 to 80 percent
Calcium carbonate equivalent: 15 to 50 percent
Gypsum content: 20 to 50 percent
Electrical conductivity: 2 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 7.8

Camac Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: terraces
Parent material: alluvium derived from mixed sources over residuum derived from shale and siltstone
Elevation: 4,800 to 6,100 feet
Slope: 15 to 60 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Haplocambids

Typical Pedon

Camac very cobbly fine sandy loam, in an area of Blackston-Camac-Rock outcrop complex, 0 to 60 percent slopes, from the adjoining Shiprock Area Soil Survey; USGS Skinney Rock topographic quadrangle; 36 degrees 47 minutes 26 seconds north

latitude and 108 degrees 40 minutes 57 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

A—0 to 3 inches; brown (10YR 5/3) very cobbly fine sandy loam, brown (10YR 4/3) moist; moderate fine granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine, and few fine throughout; 30 percent gravel and 20 percent cobbles; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bw—3 to 12 inches; light yellowish brown (10YR 6/4) gravelly loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and few fine roots throughout; few very fine irregularly shaped pores; 10 percent gravel and 5 percent cobbles; strongly effervescent, few fine irregular carbonate masses on undersides of gravel; moderately alkaline (pH 8.2); clear smooth boundary.

Bk—12 to 17 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 4/3) moist; moderate coarse subangular blocky structure; hard, firm, slightly sticky, slightly plastic; few very fine, and few fine roots throughout; common very fine tubular pores; 15 percent gravel and 5 percent cobbles; strongly effervescent, common fine irregular carbonate masses on faces of peds and on rock fragments; moderately alkaline (pH 8.4); abrupt wavy boundary.

2BCk—17 to 22 inches; grayish brown (10YR 5/2) clay loam, dark yellowish brown (10YR 4/2) moist; weak coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine and common fine roots throughout; common very fine tubular pores; 5 percent gravel; strongly effervescent, few fine irregular carbonate masses on faces of peds and on rock fragments; strongly alkaline (pH 8.6); clear wavy boundary.

2C—22 to 31 inches; gray (10YR 5/1) extremely parachannery clay loam, dark gray (10YR 4/1) moist; massive, platy rock structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and common fine roots throughout; few very fine horizontal pores; 60 percent soft siltstone fragments; strongly effervescent; strongly alkaline (pH 8.7); clear wavy boundary.

2Cr—31 inches; thinly interbedded siltstone and shale bedrock.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 57 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Surface fragments: 0 to 35 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 35 percent

A horizon:
Hue: 10YR
Value: 5 or 6 dry; 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: fine sandy loam
Clay content: 10 to 18 percent
Fragments: 35 to 60 percent, mainly gravel and cobble
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Bw or Bk horizon:
Hue: 10YR
Value: 5 or 6 dry; 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: sandy clay loam, fine sandy loam or loam
Clay content: 15 to 27 percent
Fragments: 15 to 35 percent, mainly gravel
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 9.0

BC or C horizon:
Hue: 10YR to 2.5Y
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 1 to 3
Texture, fine earth fraction: clay loam, silt loam or loam
Clay content: 18 to 35 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 10 to 15 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 4 to 8 mmhos/cm
Sodium adsorption ratio: 5 to 13
Reaction: pH 7.9 to 9.0

Chimrock Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: alluvial flats, fan piedmonts
Parent material: slope alluvium derived from sandstone and shale
Elevation: 4,800 to 5,700 feet
Slope: 1 to 3 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Argigypsids

Typical Pedon

Chimrock very fine sandy loam, 1 to 3 percent slopes, USGS Tanner Mesa topographic quadrangle, 37 degrees 3 minutes 54 seconds north latitude and 108 degrees 43 minutes 0 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 3 percent gravel.

A—0 to 3 inches; light yellowish brown (10YR 6/4) very fine sandy loam, brown (10YR 5/3) moist; moderate very thick platy structure parting to weak fine granular; soft, very friable, nonsticky, nonplastic; common very fine roots throughout; common very fine vesicular pores; strongly effervescent; 1 percent gravel; moderately alkaline (pH 8.1); abrupt smooth boundary.

AB—3 to 15 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; moderately hard, very friable, nonsticky, nonplastic; few very fine roots throughout; few very fine dendritic tubular pores; very few distinct clay films on faces of peds and in pores; 1 percent gravel; violently effervescent; strongly alkaline (pH 8.5); gradual smooth boundary.

Bt—15 to 32 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; moderate medium subangular blocky structure; very hard, firm, slightly sticky, slightly plastic; common very fine roots throughout; few very fine dendritic tubular pores; few distinct clay films on faces of peds and in pores; common fine carbonate threads throughout; 1 percent gravel; violently effervescent; moderately alkaline (pH 7.9); abrupt wavy boundary.

By—32 to 46 inches; pale brown (10YR 6/3) silt loam, olive brown (2.5Y 4/3) moist; massive; slightly hard, very friable, nonsticky, nonplastic; few fine gypsum threads throughout; gypsum pendants beneath coarse fragments; 5 percent gravel; slightly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary.

C—46 to 60 inches; pale brown (10YR 6/3) loam, olive brown (2.5Y 4/3) moist; massive; slightly hard, very friable, nonsticky, nonplastic; few fine gypsum threads throughout; 3 percent gravel; slightly effervescent; moderately alkaline (pH 8.3).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to gypsic horizon: 18 to 35 inches
Surface fragments: 0 to 15 percent gravel

Particle-size control section (weighted average):
- *Clay content:* 18 to 35 percent
- *Rock fragment content:* 0 to 5 percent

A horizon:
- *Hue:* 10YR
- *Value:* 5 or 6 dry; 4 or 5 moist
- *Chroma:* 3 or 4
- *Texture, fine earth fraction:* fine sandy loam and loam
- *Clay content:* 10 to 27 percent
- *Fragments:* 0 to 5 percent
- *Calcium carbonate equivalent:* 5 to 15 percent
- *Gypsum content:* 0 to 2 percent
- *Electrical conductivity:* 0 to 4 mmhos/cm
- *Sodium adsorption ratio:* 0 to 13
- *Reaction:* pH 7.9 to 8.4

Bt horizon:
- *Hue:* 10YR to 2.5Y
- *Value:* 5 or 6 dry; 4 or 5 moist
- *Chroma:* 3 or 4
- *Texture, fine earth fraction:* clay loam, loam, silt loam or silty clay loam
- *Clay content:* 18 to 35 percent
- *Fragments:* 0 to 5 percent
- *Calcium carbonate equivalent:* 5 to 15 percent
- *Gypsum content:* 0 to 3 percent
- *Electrical conductivity:* 0 to 8 mmhos/cm
- *Sodium adsorption ratio:* 0 to 30
- *Reaction:* pH 7.9 to 9.0

By horizon:

Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: silt loam, clay loam, sandy clay loam, loam sandy loam or silty clay loam
Clay content: 5 to 35 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 1 to 30 percent
Gypsum content: 1 to 10 percent
Electrical conductivity: 4 to 16 mmhos/cm
Sodium adsorption ratio: 0 to 30
Reaction: pH 7.9 to 9.0

Claysprings Series

Depth class: very shallow to shallow
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: buttes, cuestas, hills, knobs, structural benches
Parent material: residuum derived from shale
Elevation: 4,800 to 6,000 feet
Slope: 3 to 65 percent

Climatic data:

Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Clayey, smectitic, calcareous, mesic, shallow Typic Torriorthents

Typical Pedon

Claysprings very stony clay loam, in an area of Uzacol-Zwicker-Claysprings complex, 3 to 12 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Bowdish Canyon topographic quadrangle; 37 degrees 20 minutes 59 seconds north latitude and 108 degrees 55 minutes 47 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 40 percent gravel, 10 percent cobbles, 15 percent stones.

A—0 to 3 inches; pink (5YR 7/3) very stony clay loam, dark brown (7.5YR 4/4) moist; weak fine granular structure; soft, very friable, slightly sticky, slightly plastic; 10 percent gravel, 10 percent cobbles, and 15 percent stones; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

AC—3 to 9 inches; light reddish brown (5YR 6/3) clay, reddish brown (5YR 4/4) moist; moderate fine angular and subangular blocky structure; hard, firm, moderately sticky, moderately plastic; slightly effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

Cy—9 to 18 inches; reddish gray (5YR 5/2) clay, reddish brown (5YR 4/4) moist; massive; hard, friable, moderately sticky, moderately plastic; common fine gypsum crystals; strongly effervescent; very strongly alkaline (pH 9.2); abrupt smooth boundary.

Cr—18 inches; slightly weathered Morrison shale.

Range in Characteristics

Soil moisture: typic aridic

Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Surface fragments: 0 to 85 percent, mainly gravel and cobble

Particle-size control section (weighted average):
Clay content: 35 to 60 percent
Rock fragment content: 0 to 30 percent

A horizon:
Hue: 5YR to 7.5 YR
Value: 4 to 7 dry; 4 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam or sandy clay loam
Clay content: 20 to 35 percent
Fragments: 20 to 60 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 10
Reaction: pH 7.4 to 9.2

C horizon:
Hue: 5YR to 7.5YR
Value: 4 to 6 dry; 4 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay, clay loam or silty clay
Clay content: 35 to 60 percent
Fragments: 0 to 30 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 to 10 percent
Electrical conductivity: 0 to 16 mmhos/cm
Sodium adsorption ratio: 0 to 30
Reaction: pH 7.9 to 9.2

Cowboy Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: drainageways, fan piedmonts, flood plains
Parent material: alluvium and slope alluvium derived from shale
Elevation: 4,800 to 5,700 feet
Slope: 1 to 12 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine, smectitic, mesic Leptic Haplogypsids

Typical Pedon

Cowboy silty clay, in an area of Cowboy-Kava complex, 3 to 12 percent slopes; USGS Sentinel Peak Southwest topographic quadrangle, 37 degrees 6 minutes 42 seconds north latitude and 109 degrees 58 minutes 13 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 8 percent gravel, 2 percent cobbles, 1 percent stones.

A—0 to 2 inches; light olive brown (2.5Y 5/4) silty clay, light olive brown (2.5Y 5/3) moist; strong very fine granular structure; soft, very friable, moderately sticky and moderately plastic; many very fine roots throughout; 5 percent sandstone gravel; slightly effervescent; moderately alkaline (pH 8.1); abrupt wavy boundary.

BA—2 to 5 inches; light yellowish brown (2.5Y 6/4) silty clay, light olive brown (2.5Y 5/3) moist; moderate very coarse prismatic structure parting to moderate very thick platy; hard, very firm, very sticky and very plastic; few fine roots between peds and common very fine roots throughout; few fine and few very fine dendritic tubular pores; few fine irregular carbonate masses; few fine irregular gypsum crystals and few medium irregular nests of gypsum; 3 percent sandstone gravel; slightly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

By1—5 to 19 inches; light yellowish brown (2.5Y 6/4) clay, light olive brown (2.5Y 5/3) moist; strong very coarse prismatic structure parting to moderate medium and coarse subangular blocky; very hard, extremely firm, very sticky and very plastic; few medium roots in cracks and common fine and very fine roots between peds; few fine dendritic tubular pores; common prominent clay films on faces of peds; common fine irregular gypsum crystals and common medium nests of gypsum; 1 percent sedimentary gravel; slightly effervescent; moderately alkaline (pH 8.1); clear wavy boundary.

By2—19 to 36 inches; light yellowish brown (2.5Y 6/4) clay, olive brown (2.5Y 4/3) moist; moderate medium subangular blocky; very hard, extremely firm, very sticky and very plastic; few medium roots in cracks and common fine and very fine roots between peds; few fine dendritic tubular pores; few distinct pressure faces on faces of peds; few fine irregular gypsum crystals and few medium irregular nests of gypsum; 1 percent sedimentary gravel; very slightly effervescent; moderately alkaline (pH 8.2); diffuse wavy boundary.

By3—36 to 61 inches; light yellowish brown (2.5Y 6/4) silty clay, olive brown (2.5Y 4/3) moist; moderate medium subangular blocky; very hard, extremely firm, very sticky and very plastic; few very fine roots between peds; few distinct pressure faces on faces of peds; common medium irregular nests of gypsum; 3 percent sedimentary gravel; slightly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary.

Cr—61 to 68 inches; soft Mancos shale.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 60 or more inches to bedrock (paralithic)
Depth to gypsic horizon: 3 to 7 inches
Surface fragments: 0 to 15 percent gravel

Particle-size control section (weighted average):
Clay content: 40 to 60 percent
Rock fragment content: 0 to 5 percent

A horizon:
Hue: 2.5Y to 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: silty clay or clay
Clay content: 40 to 60 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 to 5 percent

Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 10
Reaction: pH 7.9 to 8.4

By horizon:
Hue: 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: stratified silty clay or clay
Clay content: 40 to 60 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 5 to 15 percent
Electrical conductivity: 4 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 25
Reaction: pH 7.9 to 8.4

Crosscan Series

Depth class: very shallow to shallow
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: canyons
Parent material: residuum derived from sandstone and shale
Elevation: 5,400 to 6,200 feet
Slope: 6 to 80 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Loamy-skeletal, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents

Typical Pedon

Crosscan very bouldery sandy clay loam, in an area of Romberg-Crosscan-Rock Outcrop complex, 25 to 80 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Woods Canyon topographic quadrangle; 37 degrees 25 minutes 57 seconds north latitude and 108 degrees 46 minutes 03 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 30 percent gravel, 10 percent cobbles, 10 percent stones, 10 percent boulders.

A—0 to 2 inches; dark brown (7.5YR 4/4) very bouldery sandy clay loam, dark brown (7.5YR 3/2) moist; moderate medium granular structure parting to weak fine granular; soft, very friable, slightly sticky, slightly plastic; 25 percent gravel, 10 percent cobbles, 10 percent stones, and 5 percent boulders; slightly effervescent; slightly alkaline (pH 7.5); clear wavy boundary.
AC—2 to 9 inches; light brown (7.5YR 6/4) very gravelly clay loam, dark brown (7.5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; 25 percent gravel, 10 percent cobbles, and 10 percent stones; strongly effervescent; slightly alkaline (pH 7.8); clear wavy boundary.
C—9 to 18 inches; variegated colors (5YR to 2.5Y) of very gravelly clay loam, weak

fine and medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; 25 percent gravel, 10 percent cobbles, and 10 percent stones; disseminated calcium carbonate; strongly effervescent; moderately alkaline (pH 7.9); abrupt wavy boundary.

Cr—18 inches; calcareous shale.

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Surface fragments: 35 to 80 percent

Particle-size control section (weighted average):
Clay content: 27 to 35 percent
Rock fragment content: 35 to 60 percent

A or AC horizon:
Hue: 7.5YR to 2.5Y
Value: 4 to 6 dry; 3 or 4 moist
Chroma: 2 to 4
Texture, fine earth fraction: sandy clay loam or loam
Clay content: 20 to 35 percent
Fragments: 35 to 60 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

C horizon:
Hue: 7.5YR to 2.5Y
Texture, fine earth fraction: clay loam, sandy clay loam or loam
Clay content: 18 to 35 percent
Fragments: 35 to 60 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Decorock Series

Depth class: deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: paleoterraces
Parent material: reworked alluvium derived from mixed sources over shale
Elevation: 4,800 to 5,700 feet
Slope: 20 to 50 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Clayey-skeletal, smectitic, mesic Typic Argigypsids

Typical Pedon

Decorock very gravelly clay loam, in an area of Decorock-Salamander-Badlands association, 3 to 60 percent slopes; USGS Sentinel Peak Southwest topographic quadrangle; 37 degrees 0 minutes 11.18 seconds north latitude and 108 degrees 58 minutes 44.83 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 40 percent gravel, 25 percent cobbles, 5 percent stones.

A—0 to 5 inches; yellowish brown (10YR 5/4) very gravelly clay loam, light olive brown (2.5Y 5/3) moist; moderate medium granular structure; soft, very friable, very sticky and very plastic; many very fine roots throughout; 30 percent gravel, 10 percent cobbles, and 1 percent stones; violently effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

BA—5 to 10 inches; light yellowish brown (2.5Y 6/4) gravelly clay loam, light olive brown (2.5Y 5/4) moist; moderate medium subangular blocky structure parting to moderate medium granular; slightly hard, friable, very sticky and very plastic; many very fine roots throughout; common very fine dendritic tubular pores; few fine irregular masses of gypsum; 20 percent gravel, 5 percent cobbles, and 1 percent stones; violently effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.

By1—10 to 15 inches; light yellowish brown (2.5Y 6/4) gravelly clay, light olive brown (2.5Y 5/4) moist; moderate medium subangular blocky structure; hard, very firm, very sticky and very plastic; common very fine roots throughout; few fine and common very fine dendritic tubular pores; few fine irregular masses of gypsum; 15 percent gravel, 10 percent cobbles, and 1 percent stones; violently effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.

By2—15 to 26 inches; light yellowish brown (2.5Y 6/4) gravelly clay, light olive brown (2.5Y 5/4) moist; moderate medium and coarse subangular blocky structure; hard, very firm, very sticky and very plastic; few very fine roots throughout; many very fine dendritic tubular pores; few distinct clay films on rock fragments and on surfaces along pores; common fine irregular masses of gypsum; calcium carbonate coatings on bottom of rock fragments; 15 percent gravel, 10 percent cobbles, and 1 percent stones; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bty—26 to 58 inches; light yellowish brown (2.5Y 6/4) extremely cobbly clay loam, light olive brown (2.5Y 5/4) moist; moderate medium and coarse subangular blocky structure; hard, very firm, very sticky and very plastic; few very fine roots throughout; few very fine dendritic tubular pores; few distinct clay films on rock fragments and on surfaces along pores; calcium carbonate and gypsum pendants on bottom of rock fragments; many medium irregular nests of gypsum; 35 percent gravel, 30 percent cobbles, and 1 percent stones; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

2Cr—58 to 78 inches; soft Mancos shale.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 40 to 60 inches to bedrock (paralithic)
Depth to gypsic horizon: 15 to 30 inches
Surface fragments: 35 to 80 percent

Particle-size control section (weighted average):
Clay content: 40 to 60 percent
Rock fragment content: 35 to 60 percent

A horizon:
Hue: 2.5Y or 10YR
Value: 5 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay loam
Clay content: 27 to 40 percent
Fragments: 35 to 60 percent
Calcium carbonate equivalent: 10 to 15 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.4 to 7.8

By horizon:
Hue: 2.5Y
Value: 6 dry; 5 moist
Chroma: 4
Texture, fine earth fraction: clay loam, silty clay loam or clay
Clay content: 35 to 45 percent
Fragments: 15 to 35 percent
Calcium carbonate equivalent: 10 to 20 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.9 to 8.4

Bty horizon:
Hue: 2.5Y
Value: 6 dry; 5 moist
Chroma: 4
Texture, fine earth fraction: clay or clay loam
Clay content: 35 to 60 percent
Fragments: 60 to 80 percent
Calcium carbonate equivalent: 10 to 15 percent
Gypsum content: 5 to 10 percent
Electrical conductivity: 4 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.9 to 8.4

Dolcan Series

Depth class: very shallow to shallow
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: paleoterraces, ridges, canyons
Parent material: residuum derived from sandstone and shale
Elevation: 6,200 to 7,800 feet
Slope: 9 to 60 percent

Climatic data:
Mean annual precipitation: 13 to 19 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Loamy, mixed, superactive, calcareous, mesic, shallow Aridic Ustorthents

Typical Pedon

Dolcan very gravelly loam, in an area of Dolcan-Kucu association, 3 to 25 percent slopes; USGS Red Horse Gulch topographic quadrangle; 37 degrees 4 minutes 19 seconds north latitude and 108 degrees 20 minutes 3 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 25 percent gravel, 15 percent cobbles, 5 percent stones.

A—0 to 3 inches; brown (10YR 5/3) very gravelly loam, brown (10YR 4/3) moist; moderate very fine granular structure; soft, very friable, moderately sticky, moderately plastic; many very fine roots throughout; common very fine vesicular pores; 35 percent gravel, 10 percent cobbles, and 5 percent stones; slightly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bw—3 to 6 inches; dark yellowish brown (10YR 5/4) gravelly loam, yellowish brown (10YR 4/4) moist medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and common fine roots throughout; common very fine dendritic tubular and common fine dendritic tubular pores; 5 percent fine irregular carbonate masses; 15 percent gravel and 5 percent stones; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk—6 to 10 inches; yellowish brown (10YR 6/3) loam, pale brown (10YR 5/4) moist medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and common medium roots throughout; few medium dendritic tubular and common very fine dendritic tubular pores; 20 percent fine irregular carbonate masses; 10 percent gravel; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Cr—10 inches; shale.

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 48 to 52 degrees F
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Surface fragments: 35 to 90 percent

Particle-size control section (weighted average):
- *Clay content:* 18 to 35 percent
- *Rock fragment content:* 5 to 35 percent

A horizon:
- *Hue:* 7.5YR to 10YR
- *Value:* 4 to 6 dry; 3 or 4 moist
- *Chroma:* 1 to 3
- *Texture, fine earth fraction:* loam, fine sandy loam or clay loam
- *Clay content:* 8 to 35 percent
- *Fragments:* 20 to 60 percent
- *Calcium carbonate equivalent:* 0 to 2 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 7.4 to 8.4

Bw horizon (if present):
- *Hue:* 10YR
- *Value:* 5 dry; 4 moist
- *Chroma:* 4
- *Texture, fine earth fraction:* clay loam or loam
- *Clay content:* 20 to 35 percent

Fragments: 5 to 35 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Bk or C horizon:
Hue: 10YR
Value: 5 dry; 4 moist
Chroma: 4
Texture, fine earth fraction: clay loam or loam
Clay content: 20 to 35 percent
Fragments: 5 to 35 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Eagleye Series

Depth class: shallow
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: escarpments, structural benches
Parent material: slope alluvium and residuum derived from shale and sandstone
Elevation: 5,400 to 6,200 feet
Slope: 15 to 60 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Clayey, mixed, active, nonacid, mesic, shallow Ustic Torriorthents

Typical Pedon

Eagleye very channery clay loam in an area of Strych-Eagleye-Rock outcrop complex, 15 to 70 percent slopes, from the adjoining Shiprock Area Soil Survey; USGS Palmer Mesa topographic quadrangle; 36 degrees 58 minutes 55 seconds north latitude and 108 degrees 32 minutes 13 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 60 percent channers, 10 percent cobbles, 5 percent stones, 5 percent boulders.

A—0 to 2 inches; pale brown (10YR 6/3) very channery clay loam, brown (10YR 4/3) moist; moderate medium platy structure parting to moderate very fine granular; soft, friable, slightly sticky, slightly plastic; few very fine roots; common 0.25- to 0.5-inch-wide cracks; 30 percent channers, 5 percent flagstones, and 5 percent boulders; very slightly effervescent; mildly alkaline (pH 7.6); clear wavy boundary.

2Bw—2 to 8 inches; light yellowish brown (2.5Y 6/4) and gray (10YR 5/1) parachannery silty clay loam, light olive brown (2.5Y 5/4) and dark gray (10YR 4/1) moist; moderate very coarse prismatic structure parting to weak very thick platy; hard, firm, moderately sticky, moderately plastic; few medium and fine and

common very fine roots; common 0.25- to 0.5-inch-wide cracks; 15 percent parachanners; mildly alkaline (pH 7.6); clear smooth boundary.
2Cy—8 to 18 inches; light brownish gray (2.5Y 6/2) and gray (10YR 5/1) extremely parachannery silty clay loam, grayish brown (2.5Y 5/2) and dark gray (10YR 4/1) moist; massive, platy rock structure; slightly hard, friable, moderately sticky, moderately plastic; few fine and common very fine roots; few 0.25- to 0.5-inch-wide cracks; 60 percent parachanners; secondary gypsum crystals segregated in very few fine accumulations on rock fragments; mildly alkaline (pH 7.8); clear smooth boundary.
2Cr—18 inches; shale bedrock.

Range in Characteristics

Soil moisture: ustic aridic
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Surface fragments: 0 to 85 percent

Particle-size control section (weighted average):
Clay content: 35 to 50 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 10YR or 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam
Clay content: 30 to 40 percent
Fragments: 35 to 60 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 to 2 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

Bw or BC horizon:
Hue: 10YR or 2.5Y
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 1 to 4
Texture, fine earth fraction: silty clay loam or silty clay
Clay content: 35 to 50 percent
Fragments: 0 to 15 percent, 0 to 20 percent pararocks
Calcium carbonate equivalent: 1 to 3 percent
Gypsum content: 0 to 2 percent
Electrical conductivity: 4 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

By, C or Cy horizon:
Hue: 10YR or 2.5Y
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 1 to 4
Texture, fine earth fraction: silty clay loam or silty clay
Clay content: 35 to 50 percent
Fragments: 0 to 15 percent, 30 to 70 percent pararocks
Calcium carbonate equivalent: 0 to 1 percent
Gypsum content: 2 to 5 percent
Electrical conductivity: 4 to 16 mmhos/cm

Sodium adsorption ratio: 5 to 13
Reaction: pH 7.4 to 8.4

Elias Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.001 to 0.06 in/hr (very slow)
Landform: flood plains
Parent material: alluvium derived from sandstone and shale
Elevation: 5,400 to 6,200 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Fine-loamy, mixed, superactive, mesic Ustic Natrargids

Typical Pedon

Elias fine sandy loam, in an area of Elias-Yarts complex, 1 to 6 percent slopes; USGS Purgatory Canyon topographic quadrangle; 36 degrees 57 minutes 4.4 seconds north latitude and 108 degrees 17 minutes 59.0 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 3 inches; light yellowish brown (2.5Y 6/3) fine sandy loam, olive brown (2.5Y 4/3) moist; weak fine granular structure and weak medium subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common very fine roots throughout; common very fine dendritic tubular pores; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

AB—3 to 6 inches; light yellowish brown (2.5Y 6/4) sandy loam, olive brown (2.5Y 4/3) moist; weak medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common very fine and common medium roots throughout; common very fine dendritic tubular and common medium tubular pores; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Btny1—6 to 16 inches; light yellowish brown (2.5Y 6/4) loam, olive brown (2.5Y 4/3) moist; weak thick prismatic structure parting to weak coarse subangular blocky structure; hard, firm, slightly sticky, slightly plastic; many very fine tubular pores; 90 percent distinct clay bridging between sand grains; 3 percent fine irregular gypsum masses lining pores; violently effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

Btny2—16 to 30 inches; light yellowish brown (2.5Y 6/4) loam, olive brown (2.5Y 4/3) moist; weak medium subangular blocky; very hard, firm, slightly sticky, slightly plastic; common very fine tubular pores; 90 percent distinct clay bridging between sand grains; 2 percent fine irregular gypsum masses lining pores; violently effervescent; strongly alkaline (pH 8.7); clear wavy boundary.

Btn—30 to 39 inches; olive brown (2.5Y 4/3) loam, very dark olive brown (2.5Y 3/3) moist; weak medium subangular blocky; very hard, very firm, slightly sticky, slightly plastic; common very fine tubular pores; 70 percent distinct clay bridging between sand grains; violently effervescent; strongly alkaline (pH 8.7); clear wavy boundary.

C1—39 to 54 inches; light yellowish brown (2.5Y 6/4) sandy loam, olive brown (2.5Y 4/4) moist; massive; very hard, very firm, slightly sticky, slightly plastic; common

very fine tubular pores; violently effervescent; strongly alkaline (pH 8.7); gradual wavy boundary.

C2—54 to 80 inches; light yellowish brown (10YR 6/4) very fine sandy loam, yellowish brown (10YR 5/4) moist; massive; very hard, firm, slightly sticky, slightly plastic; common very fine, and few fine tubular pores; 1 percent gravel; violently effervescent; strongly alkaline (pH 9.0); diffuse wavy boundary.

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Depth to natric horizon: 1 to 10 inches
Surface fragments: 0 to 5 percent gravel

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 10 percent

A horizon:
Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 to 4 dry
Texture, fine earth fraction: fine sandy loam or loam
Clay content: 12 to 20 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 to 3 percent
Electrical conductivity: 1 to 5 mmhos/cm
Sodium adsorption ratio: 5 to 10
Reaction: pH 7.4 to 8.4

Btny or Btn horizon:
Hue: 10YR to 5Y
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 3 to 4
Texture, fine earth fraction: sandy clay loam, clay loam or loam
Clay content: 18 to 35 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 2 to 10 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 2 to 12 mmhos/cm
Sodium adsorption ratio: 13 to 40
Reaction: pH 8.5 to 9.0

C horizon:
Hue: 10YR to 5Y
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 3 to 4
Texture, fine earth fraction: sandy loam, sandy clay loam, clay loam or loam
Clay content: 10 to 35 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 2 to 10 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 2 to 12 mmhos/cm
Sodium adsorption ratio: 13 to 50
Reaction: pH 8.5 to 9.0

Escavada Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: flood plains
Parent material: alluvium derived from sandstone and shale
Elevation: 4,800 to 5,700 feet
Slope: 0 to 1 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Sandy, mixed, mesic Ustic Torrifluvents

Typical Pedon

Escavada very fine sandy loam, in an area of Notal-Escavada-Riverwash association, 0 to 1 percent slopes, from the adjoining Shiprock Area Soil Survey; USGS The Hogback North, New Mexico topographic quadrangle; 36 degrees 42 minutes 57 seconds north latitude and 108 degrees 32 minutes 52 seconds west longitude. NAD 27 (colors for dry soil unless otherwise noted).

Surface fragments: none.

C1—0 to 2 inches; light brownish gray (10YR 6/2) very fine sandy loam, dark grayish brown (10YR 4/2) moist; moderate thick platy structure parting to weak fine granular; soft, very friable, slightly sticky, nonplastic; few very fine, and few fine roots throughout; slightly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

C2—2 to 7 inches; pale brown (10YR 6/3) fine sand, dark grayish brown (10YR 4/2) moist; single grain; loose, nonsticky, nonplastic; common very fine and common fine roots throughout; very slightly effervescent; slightly alkaline (pH 7.8); clear wavy boundary.

C3—7 to 12 inches; light brownish gray (10YR 6/2) very fine sandy loam, dark grayish brown (10YR 4/2) moist; moderate very thick platy structure; soft, very friable, slightly sticky, slightly plastic; common very fine and common fine roots throughout; few very fine irregularly shaped pores; slightly effervescent; moderately alkaline (pH 8.0); abrupt wavy boundary.

C4—12 to 20 inches; pale brown (10YR 6/3) laminated fine sand, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, nonsticky, nonplastic; common very fine, few fine and few medium roots throughout; 2 percent fine gravel; very slightly effervescent; slightly alkaline (pH 7.8); clear wavy boundary.

C5—20 to 30 inches; grayish brown (10YR 5/2) loamy fine sand, dark grayish brown (10YR 4/2) moist; massive; slightly hard, very friable, slightly sticky, nonplastic; common very fine and common fine roots throughout; few very fine irregularly shaped pores; few strata of loamy very fine sand 0.5 to 1 inch thick and few lamina of silty clay; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

C6—30 to 70 inches; light brownish gray (10YR 6/2) laminated fine sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky, nonplastic; common very fine, few fine and few medium roots throughout; few strata of very fine sand and loamy very fine sand 0.5 to 1 inch thick; very slightly effervescent; slightly alkaline (pH 7.8).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 47 to 57 degrees F
Surface fragments: 0 to 5 percent
Seasonal high water table: November to May

Particle-size control section (weighted average):
Clay content: 2 to 10 percent
Rock fragment content: 0 to 5 percent

A or C1 horizon:
Hue: 5YR to 10YR
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 2 to 6
Texture, fine earth fraction: very fine sandy loam
Clay content: 5 to 15 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

C horizon:
Hue: 5Yr to 10YR
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: stratified fine sand to silty clay
Clay content: 2 to 10 percent
Fragments: 0 to 5 percent gravel
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 4 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 9.0

Farb Series

Depth class: shallow and very shallow
Drainage class: excessively
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Landform: mesas, hogbacks
Parent material: eolian material and residuum derived from sandstone
Elevation: 4,800 to 5,700 feet
Slope: 3 to 15 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Loamy, mixed, superactive, calcareous, mesic Lithic Torriorthents

Typical Pedon

Farb sandy loam, in an area of Farb-Rock outcrop complex, 3 to 12 percent slopes;

USGS Mariano Wash East topographic quadrangle; 37 degrees 9 minutes 14 seconds north latitude and 108 degrees 50 minutes 44 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 50 percent gravel, 5 percent cobbles.

A—0 to1 inch; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10Y 4/4) moist; weak fine granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine roots throughout; few pores; 5 percent gravel; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

C1—1 inch to 9 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots throughout; 5 percent gravel; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C2—9 to 11 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots throughout; 5 percent gravel; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

R—11 inches; sandstone.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 5 to 20 inches to bedrock (lithic)
Surface fragments: 0 to 80 percent

Particle-size control section (weighted average):
- *Clay content:* 5 to 18 percent
- *Rock fragment content:* 0 to 35 percent

A horizon:
- *Hue:* 7.5YR to 10YR
- *Value:* 5 to 7 dry; 4 or 5 moist
- *Chroma:* 2 to 6
- *Texture, fine earth fraction:* sandy loam
- *Clay content:* 5 to 18 percent
- *Fragments:* 0 to 60 percent
- *Calcium carbonate equivalent:* 1 to 15 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 to 2 mmhos/cm
- *Sodium adsorption ratio:* 0 to 3
- *Reaction:* pH 7.4 to 8.4

C horizon:
- *Hue:* 7.5YR or 10YR
- *Value:* 5 to 8 dry; 4 to 7 moist
- *Chroma:* 4 to 6
- *Texture, fine earth fraction:* sand, sandy loam or fine sandy loam
- *Clay content:* 5 to 18 percent
- *Fragments:* 0 to 35 percent
- *Calcium carbonate equivalent:* 1 to 15 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 to 2 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 7.4 to 8.4

Fardraw Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: structural benches
Parent material: old alluvium from mixed sources
Elevation: 7,100 to 8,500 feet
Slope: 0 to 9 percent

Climatic data:
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F
Frost-free period: 80 to 100 days

Taxonomic class: Clayey-skeletal, smectitic, frigid Typic Argiustolls

Typical Pedon

Fardraw very cobbly loam, 0 to 9 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Glade Mountain topographic quadrangle; 37 degrees, 44 minutes, 14 seconds north latitude and 108 degrees, 35 minutes, 42 seconds west latitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 25 percent gravel, 20 percent cobbles.

A1—0 to 2 inches; brown (7.5YR 4/3) very cobbly loam, dark brown (7.5YR 3/2) moist; moderate coarse granular structure parting to weak fine granular; slightly hard, very friable, nonsticky, nonplastic; common very fine and common fine roots throughout; 25 percent gravel, 20 percent cobbles, and 10 percent stones; slightly alkaline (pH 7.4); clear wavy boundary.

A2—2 to 9 inches; brown (7.5YR 4/3) very cobbly loam, very dark brown (7.5YR 2.5/2) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine, common fine, and few medium roots throughout; common very fine discontinuous tubular pores; 25 percent gravel, 20 percent cobbles, and 10 percent stones; slightly alkaline (pH 7.4); clear wavy boundary.

AB—9 to 13 inches; brown (7.5YR 4/3) very cobbly clay loam, dark reddish brown (7.5YR 3/3) moist; weak medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine, common fine and common medium roots throughout; common very fine and few fine discontinuous tubular pores; common faint discontinuous clay films on faces of peds; 25 percent gravel, 20 percent cobbles, and 10 percent stones; neutral (pH 7.2); abrupt wavy boundary.

Bt1—13 to 28 inches; brown (7.5YR 4/4) very cobbly clay loam, dark reddish brown (7.5YR 3/4) moist; moderate medium subangular blocky structure; extremely hard, firm, moderately sticky, moderately plastic; common very fine, common fine, and few medium roots throughout; few very fine, and fine discontinuous tubular pores; many distinct continuous clay films on faces of peds and in pores and many prominent continuous clay films around rock fragments; 25 percent gravel, 20 percent cobbles, and 10 percent stones; slightly alkaline (pH 7.4); gradual irregular boundary.

Bt2—28 to 36 inches; brown (7.5YR 5/4) very cobbly clay loam, reddish brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; extremely hard, firm, moderately sticky, moderately plastic; few medium roots throughout; few medium discontinuous tubular pores; many distinct continuous clay films on faces of peds and in pores and many prominent continuous clay films on rock

fragments; 25 percent gravel, 20 percent cobbles, and 10 percent stones; slightly alkaline (pH 7.4); gradual wavy boundary.

Bt3—36 to 53 inches; strong brown (7.5YR 5/6) very cobbly clay loam, strong brown (7.5YR 4/6) moist; moderate medium subangular blocky structure; slightly hard, firm, moderately sticky, moderately plastic; many distinct continuous clay films on faces of peds and in pores and many prominent continuous clay films around rock fragments; 25 percent gravel, 20 percent cobbles, and 10 percent stones; slightly alkaline (pH 7.4); gradual wavy boundary.

Bt4—53 to 60 inches; strong brown (7.5YR 5/6) very cobbly clay loam, brown (7.5YR 5/4) moist; moderate medium subangular blocky structure; extremely hard, firm, moderately sticky, moderately plastic; many distinct continuous clay films on faces of peds and in pores and many prominent continuous clay films around rock fragments; 25 percent gravel, 20 percent cobbles, and 10 percent stones; slightly alkaline (pH 7.6).

Range in Characteristics

Soil moisture: typic ustic
Mean annual soil temperature: 45 to 49 degrees F
Surface fragments: Unspecified

Particle-size control section (weighted average):
- *Clay content:* 35 to 50 percent
- *Rock fragment content:* 35 to 70 percent

A horizon:
- *Hue:* 7.5YR to 10YR
- *Value:* 3 to 5 dry; 1 to 3 moist
- *Chroma:* 1 to 3
- *Texture, fine earth fraction:* loam
- *Clay content:* 15 to 27 percent
- *Fragments:* 0 to 60 percent
- *Calcium carbonate equivalent:* 0 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 6.6 to 7.8

Bt horizon:
- *Hue:* 7.5YR to 10YR
- *Value:* 4 to 6 dry; 3 to 5 moist
- *Chroma:* 3 to 6
- *Texture, fine earth fraction:* clay loam, sandy clay loam or clay
- *Clay content:* 35 to 50 percent
- *Fragments:* 35 to 70 percent
- *Calcium carbonate equivalent:* 0 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 6.6 to 7.8

Farview Series

Depth class: very shallow or shallow
Drainage class: well
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)

Landform: cuestas, hogbacks, mesas, structural benches
Parent material: slope alluvium, residuum and eolian material derived from sandstone
Elevation: 5,400 to 6,200 feet
Slope: 1 to 25 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Loamy, mixed, active, calcareous, mesic Lithic Ustic Torriorthents

Typical Pedon

Farview channery loamy sand in an area of Farview-Rock outcrop complex, 1 to 10 percent slopes; USGS Tanner Mesa topographic quadrangle. 37 degrees 01 minutes 47 seconds north latitude and 108 degrees 39 minutes 11 seconds west longitude, NAD 83. (colors are for dry soil unless otherwise noted).

Surface fragments: 15 percent channers, 5 percent flagstones.

A1—0 to1 inch; light brown (7.5YR 6/4) channery loamy sand, brown (7.5YR 4/4) moist; single grain; loose, very friable, nonsticky, nonplastic; common very fine roots throughout; 10 percent channers and 5 percent flagstones; violently effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.
A2—1 inch to 3 inches; light brown (7.5YR 6/4) channery sandy loam, brown (7.5YR 4/4) moist; single grain; loose, very friable, slightly sticky, nonplastic; common very fine roots throughout; 10 percent channers and 5 percent flagstones; violently effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.
Bk—3 to 8 inches; light brown (7.5YR 6/4) channery sandy loam, brown (7.5YR 5/4) moist; single grain; loose, very friable, slightly sticky, nonplastic; common very fine roots throughout; few fine irregular carbonate masses; 10 percent channers and 5 percent flagstones; violently effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.
R—8 inches; sandstone.

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)
Surface fragments: 0 to 60 percent

Particle-size control section (weighted average):
Clay content: 10 to 18 percent
Rock fragment content: 5 to 25 percent

A horizon:
Hue: 7.5 YR to 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 4 to 6
Texture, fine earth fraction: loamy sand
Clay content: 5 to 10 percent
Fragments: 5 to 25 percent, mainly channers
Calcium carbonate equivalent: 0 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.4 to 8.4

Bk or C horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 4 to 6
Texture, fine earth fraction: sandy loam or fine sandy loam
Clay content: 10 to 18 percent
Fragments: 5 to 25 percent, mainly channers
Calcium carbonate equivalent: 1 to 20 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.4 to 8.4

Fluvaquents

Depth class: very deep
Drainage class: somewhat poorly
Slowest permeability: 0.2 to 6 in/hr (moderately slow)
Landform: flood plains
Parent material: alluvium derived from mixed sources
Elevation: 4,800 to 7,400 feet
Slope: 0 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 16 inches
Mean annual air temperature: 46 to 56 degrees F
Frost-free period: 100 to 160 days

Taxonomic class: Fluvaquents

Reference Pedon

Fluvaquents, in an area of Fluvents-Fluvaquents complex, 0 to 3 percent slopes from the adjoining Cortez Soil Survey Area; USGS Doe Canyon topographic quadrangle; 37 degrees 38 minutes 48 seconds north latitude and 108 degrees 44 minutes 4 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 2 percent gravel.

C1—0 to 8 inches; pale brown (10YR 6/3) sandy loam, dark brown (10YR 3/3) moist; single grain; loose nonsticky, nonplastic; many very fine, common fine and coarse, and few medium roots throughout; many very fine interstitial pores; slightly effervescent; slightly alkaline (pH 7.4); clear smooth boundary.
C2—8 to 17 inches; yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 3/4) moist; common medium irregular prominent (7.5YR 5/8) iron masses; single grain; loose nonsticky, nonplastic; few very fine and fine, and common medium roots throughout; many very fine interstitial pores; slightly effervescent; slightly alkaline (pH 7.4); abrupt smooth boundary.
C3—17 to 34 inches; yellowish brown (10YR 5/4) loamy sand, dark yellowish brown (10YR 3/4) moist; many medium irregular prominent strong brown (7.5YR 5/8) iron masses; weak medium and coarse subangular blocky structure; soft, very friable, nonsticky, nonplastic; few very fine, common fine, medium and coarse roots throughout; many very fine interstitial pores; strongly effervescent; slightly alkaline (pH 7.6); clear wavy boundary.
C4—34 to 60 inches; yellowish brown (10YR 5/4) very gravelly loamy sand, dark brown (10YR 3/3) moist; many medium irregular distinct strong brown (7.5YR 5/6) iron masses; single grain; loose nonsticky, nonplastic; common very fine, fine,

medium and coarse roots throughout; many very fine interstitial pores; slightly effervescent; 35 percent gravel, 15 percent cobbles, and 5 percent stones; slightly alkaline (pH 7.6).

Range in Characteristics

Soil moisture: typic aridic to aridic ustic
Mean annual soil temperature: 48 to 58 degrees F
Surface fragments: 0 to 30 percent

Particle-size control section (weighted average):
Clay content: 2 to 10 percent
Rock fragment content: 0 to 60 percent

C horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry; 3 to 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: loamy sand and sandy loam
Clay content: 2 to 10 percent
Fragments: 0 to 60 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 7.4

Fluvents

Depth class: very deep
Drainage class: somewhat excessively
Slowest permeability: 0.2 to 20 in/hr (moderately slow)
Landform: flood plains, terraces
Parent material: alluvium derived from mixed sources
Elevation: 4,800 to 7,400 feet
Slope: 0 to 3 percent

Climatic data:
Mean annual precipitation: 7 to 16 inches
Mean annual air temperature: 46 to 56 degrees F
Frost-free period: 100 to 160 days

Taxonomic class: Fluvents

Reference Pedon

Fluvents, in an area of Fluvents-Fluvaquents complex, 0 to 3 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Woods Canyon topographic quadrangle; 37 degrees 26 minutes 20 seconds north latitude and 108 degrees 47 minutes 20 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 5 percent gravel.

A—0 to 6 inches; dark brown (7.5YR 3/4) fine sandy loam, dark brown (7.5YR 3/4) moist; moderate coarse platy structure parting to moderate medium platy; slightly hard, friable, slightly sticky, nonplastic; strongly effervescent; moderately alkaline (pH 8.0); abrupt wavy boundary.
C1—6 to 9 inches; yellowish brown (10YR 5/4) very gravelly loamy coarse sand, dark yellowish brown (10YR 3/4) moist; single grain; loose nonsticky, nonplastic;

slightly effervescent; 50 percent gravel; slightly alkaline (pH 7.8); clear wavy boundary.

C2—9 to 18 inches; light yellowish brown (10YR 6/4) loamy sand, dark yellowish brown (10YR 4/4) moist; single grain; loose nonsticky, nonplastic; strongly effervescent; 6 percent gravel; moderately alkaline (pH 8.2); clear wavy boundary.

C3—18 to 30 inches; light yellowish brown (10YR 6/4) very gravelly sand, yellowish brown (10YR 5/4) moist; single grain; loose nonsticky, nonplastic; slightly effervescent; 50 percent gravel; moderately alkaline (pH 8.2); clear wavy boundary.

C4—30 to 34 inches; light yellowish brown (10YR 6/4) gravelly sand, yellowish brown (10YR 5/4) moist; single grain; loose nonsticky, nonplastic; slightly effervescent; 20 percent gravel; moderately alkaline (pH 8.0); gradual wavy boundary.

C5—34 to 60 inches; light yellowish brown (10YR 6/4) very gravelly coarse sand, yellowish brown (10YR 5/4) moist; single grain; loose nonsticky, nonplastic; slightly effervescent; 45 percent gravel; moderately alkaline (pH 8.2).

Range in Characteristics

Soil moisture: typic aridic to aridic ustic
Mean annual soil temperature: 48 to 58 degrees F
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 5 to 15 percent
Rock fragment content: 0 to 60 percent

A horizon:
Hue: 5YR to 2.5Y
Value: 3 or 4 dry; 3 or 4 moist
Chroma: 3 or 4
Clay content: 5 to 15 percent
Reaction: pH 7.4 to 8.4

C horizon:
Hue: 5YR to 2.5Y
Value: 5 or 6 dry; 3 to 5 moist
Chroma: 4 or 5
Texture, fine earth fraction: stratified loamy coarse sand, loamy sand or sand
Clay content: 5 to 15 percent
Fragments: 0 to 60 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Fruitland Series

Depth class: very deep
Drainage class: well
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Landform: hogback valleys
Parent material: alluvium derived from sandstone
Elevation: 4,800 to 5,700 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, mesic Typic Torriorthents

Typical Pedon

Fruitland fine sandy loam, in an area of Farb-Rock outcrop-Fruitland complex, 1 to 45 percent slopes; USGS Youngslake topographic quadrangle; 36 degrees 52 minutes 5.9 seconds north latitude and 108 degrees 18 minutes 3.5 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: about 2 percent.

A1—0 to 1 inch; light olive brown (2.5Y 5/3) fine sandy loam, olive brown (2.5Y 4/3) moist; weak fine granular structure; very friable, soft, nonsticky, nonplastic; common very fine roots throughout; 5 percent gravel; strongly effervescent; slightly alkaline (pH 7.7); abrupt smooth boundary.
A2—1 inch to 4 inches; light yellowish brown (2.5Y 6/3) fine sandy loam, light olive brown (2.5Y 5/3) moist; weak medium platy structure; very friable, slightly hard, nonsticky, nonplastic; common medium roots throughout and common very fine roots throughout; 5 percent gravel; strongly effervescent; slightly alkaline (pH 7.7); abrupt smooth boundary.
C1—4 to 17 inches; light yellowish brown (2.5Y 6/3) stratified fine sandy loam, light olive brown (2.5Y 5/3) moist; massive; very friable, slightly hard, nonsticky, nonplastic; common medium and common very fine roots throughout; 1 percent gravel; strongly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.
C2—17 to 31 inches; light yellowish brown (2.5Y 6/3) stratified fine sandy loam, light olive brown (2.5Y 5/3) moist; massive; very friable, slightly hard, nonsticky, nonplastic; common very fine roots throughout; 1 percent gravel; strongly effervescent; moderately alkaline (pH 7.9); clear smooth boundary.
C3—31 to 57 inches; light yellowish brown (2.5Y 6/3) fine sandy loam, light olive brown (2.5Y 5/3) moist; massive; very friable, slightly hard, nonsticky, nonplastic; common very fine roots throughout; 1 percent gravel; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
C4—57 to 60 inches; light yellowish brown (2.5Y 6/3) fine sandy loam, light olive brown (2.5Y 5/3) moist; massive; very friable, soft, nonsticky, nonplastic; common very fine roots throughout; 1 percent gravel; strongly effervescent; moderately alkaline (pH 8.3).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 5 to 18 percent
Rock fragment content: 0 to 10 percent

A horizon:
Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: fine sandy loam

Clay content: 8 to 18 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

C horizon:
Hue: 10YR to 2.5Y
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: fine sandy loam or sandy loam
Clay content: 5 to 18 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

Gapmesa Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: mesas
Parent material: eolian material derived from sandstone
Elevation: 5,400 to 6,200 feet
Slope: 2 to 12 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Fine-loamy, mixed, superactive, mesic Ustic Haplargids

Typical Pedon

Gapmesa very fine sandy loam in an area of Rizno-Gapmesa complex, 3 to 9 percent slopes; USGS Mariano Wash East topographic quadrangle; 37 degrees 11 minutes 5 seconds north latitude and 108 degrees 50 minutes 48 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 10 percent gravel, 1 percent cobbles.

A1—0 to 2 inches; light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) moist; moderate fine granular structure; soft, very friable, nonsticky, nonplastic; common very fine roots throughout; 10 percent gravel; noneffervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.
Bt—2 to 8 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine and common medium roots throughout; 80 percent distinct clay films on faces of peds; 5 percent gravel; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.
Bk1—8 to 13 inches; light brown (7.5YR 6/4) loam, brown (7.5YR 5/4) moist; weak

medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common fine and common medium roots throughout; 5 percent gravel; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk2—13 to 24 inches; light brown (7.5YR 6/4) loam, brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky, slightly plastic; common fine and common medium roots throughout; 10 percent gravel and 1 percent cobbles; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk3—24 to 26 inches; light brown (7.5YR 6/4) loam, brown (7.5YR 5/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; few fine roots throughout; 10 percent gravel; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

2R—26 inches; sandstone.

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Surface fragments: 0 to 15 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 5 percent

A horizon:
Hue: 5YR to 10YR
Value: 5 or 6 dry; 3 or 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: very fine sandy loam
Clay content: 8 to 15 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 0 to 3 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 7.3

Bt horizon:
Hue: 5YR
Value: 4 to 6 dry; 4 or 5 moist
Chroma: 3 to 5
Texture, fine earth fraction: very fine sandy loam or loam
Clay content: 18 to 27 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Bk horizon:
Hue: 5YR
Value: 4 to 6 dry; 4 or 5 moist
Chroma: 4
Texture, fine earth fraction: sandy loam or loam
Clay content: 10 to 20 percent

Fragments: 15 to 75 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Gladel Series

Depth class: shallow
Drainage class: well
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Landform: mesas
Parent material: eolian material derived from sandstone
Elevation: 6,200 to 7,400 feet
Slope: 3 to 9 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Loamy, mixed, superactive, mesic Aridic Lithic Haplustepts

Typical Pedon

Gladel fine sandy loam in an area of Gladel-Pulpit complex, 3 to 9 percent slopes; USGS Trail Canyon topographic quadrangle; 37 degrees 7 minutes 17.19 seconds north latitude and 108 degrees 21 minutes 9.26 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 2 percent gravel.

A1—0 to 1 inch; brown (7.5YR 4/3) fine sandy loam, dark brown (7.5YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky, slightly plastic; common fine vesicular, and common very fine vesicular pores; 1 percent gravel; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.
A2—1 inch to 3 inches; brown (7.5YR 4/4) fine sandy loam, brown (7.5YR 4/3) moist; moderate medium platy structure, and weak medium subangular blocky structure; slightly hard, friable, nonsticky, slightly plastic; many very fine roots throughout; many very fine tubular pores; 1 percent gravel; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
Bw—3 to 11 inches; brown (7.5YR 4/4) sandy loam, brown (7.5YR 4/3) moist; weak medium subangular blocky structure; moderately hard, friable, nonsticky, slightly plastic; common very fine roots throughout; many very fine tubular pores; 1 percent fine spherical carbonate masses throughout; 2 percent gravel; strongly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
Bk—11 to 18 inches; brown (7.5YR 5/2) sandy loam, brown (7.5YR 4/3) moist; weak medium subangular blocky structure; moderately hard, friable, nonsticky, slightly plastic; common very fine roots throughout; many very fine tubular pores; 30 percent medium irregular carbonate masses throughout; 5 percent gravel; violently effervescent; strongly alkaline (pH 8.4); abrupt smooth boundary.
2R—18 inches; Cliffhouse sandstone.

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 50 to 54 degrees F

Depth to restrictive feature: 12 to 20 inches to bedrock (lithic)
Surface fragments: 0 to 60 percent

Particle-size control section (weighted average):
Clay content: 5 to 18 percent
Rock fragment content: 0 to 35 percent

A horizon:
Hue: 5YR to 10YR
Value: 5 to 7 dry; 3 to 6 moist
Chroma: 1 to 4
Texture, fine earth fraction: fine sandy loam
Clay content: 5 to 18 percent
Fragments: 0 to 15 percent mainly
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Bw horizon:
Hue: 5YR to 7.5YR
Value: 5 to 7 dry; 3 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: sandy loam or fine sandy loam
Clay content: 5 to 18 percent
Fragments: 0 to 35 percent channers and flagstones
Calcium carbonate equivalent: 2 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.9 to 8.4

Bk horizon:
Hue: 5YR to 7.5YR
Value: 5 to 7 dry; 3 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: sandy loam or fine sandy loam
Clay content: 5 to 18 percent
Fragments: 0 to 35 percent channers and flagstones
Calcium carbonate equivalent: 2 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.9 to 8.4

Greycap Series

Depth class: very shallow to shallow
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: structural benches
Parent material: residuum derived from limestone
Elevation: 4,800 to 5,700 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Loamy, carbonatic, mesic, shallow Typic Torriorthents

Typical Pedon

Greycap loam, in an area of Greycap-Nomad complex, 1 to 6 percent slopes; USGS Sentinel Peak Southwest topographic quadrangle; 37 degrees 1 minute 11.97 seconds north latitude and 108 degrees 58 minutes 21.96 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 10 percent gravel.

A—0 to 2 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; moderate medium platy structure parting to strong very fine granular; soft, very friable, nonsticky and nonplastic; common very fine roots throughout; many very fine vesicular and interstitial pores; 5 percent limestone parachanners; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
AC—2 to 6 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and medium roots throughout; many very fine dendritic tubular pores; 1 percent limestone parachanners; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.
Cr1—6 to 8 inches; highly fractured limestone from the Greenhorn member of Mancos shale; 5 percent soil between flags with many fine roots running horizontally between rocks; abrupt smooth boundary.
Cr2—8 to 10 inches; fractured limestone from the Greenhorn member of Mancos shale.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Surface fragments: 1 to 35 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 1 to 15 percent

A horizon:
Hue: 10YR
Value: 6 or 7 dry; 5 or 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam
Clay content: 15 to 27 percent
Fragments: 1 to 15 percent
Calcium carbonate equivalent: 30 to 45 percent
Gypsum content: 0 to 2 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.9 to 8.4

AC horizon:
Hue: 10YR to 2.5Y

Value: 6 or 7 dry; 5 or 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay loam or silty clay loam
Clay content: 27 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 45 to 65 percent
Gypsum content: 0 to 2 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.9 to 8.4

Gypsey Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: hills, pediments
Parent material: residuum derived from shale
Elevation: 4,800 to 5,700 feet
Slope: 3 to 12 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-loamy, carbonatic, mesic Typic Calcigypsids

Typical Pedon

Gypsey sandy clay loam, 3 to 6 percent slopes; USGS Mariano Wash West topographic quadrangle; 37 degrees 7 minutes 54 seconds north latitude and 108 degrees 53 minutes 41 seconds west longitude. NAD 27 (colors are for dry soils unless otherwise noted).

Surface fragments: none.

A—0 to 3 inches; light yellowish brown (10YR 6/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; strong very fine granular structure; soft, very friable, slightly sticky, nonplastic; common very fine and common fine roots throughout; violently effervescent; moderately alkaline (pH 8.3); abrupt smooth boundary.

Bk—3 to 9 inches; light brownish gray (10YR 6/2) clay loam, yellowish brown (10YR 5/4) moist; moderate thick platy structure; moderately hard, friable, moderately sticky, moderately plastic; common fine and common medium roots throughout; common fine irregular calcium carbonate masses; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

By1—9 to 17 inches; very pale brown (10YR 7/3) gypsiferous loam, light olive brown (2.5Y 5/4) moist; massive; soft, very friable, slightly sticky, nonplastic; common very fine and common fine roots throughout; common fine gypsum crystals, 5 percent parachanners; violently effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

By2—17 to 28 inches; very pale brown (10YR 7/4) gypsiferous loam, light olive brown (2.5Y 5/4) moist; massive; soft, very friable, slightly sticky, slightly plastic; few very fine roots matted around shale fragments and between peds; few very fine discontinuous tubular pores; common fine irregular masses of gypsum between

peds, 10 percent parachanners; violently effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.
Cr—28 inches; Mancos shale.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Depth to gypsic horizon: 4 to 13 inches
Depth to calcic horizon: 3 to 9 inches
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 5 percent

A horizon(s):
Hue: 7.5YR to 10YR
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: sandy clay loam
Clay content: 20 to 30 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.9 to 8.4

Bk horizon(s):
Hue: 7.5YR to 10YR
Value: 6 or 7 dry; 5 or 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam, silty clay loam or clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 2 percent
Calcium carbonate equivalent: 15 to 35 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.9 to 8.4

By horizon(s):
Hue: 10YR to 2.5Y
Value: 6 or 7 dry; 5 or 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: gypsiferous loam, gypsiferous silty clay loam or gypsiferous silt loam
Clay content: 20 to 35 percent
Fragments: 0 to 2 percent, lithic, 0 to 50 percent, paralithic
Calcium carbonate equivalent: 2 to 25 percent
Gypsum content: 15 to 35 percent
Electrical conductivity: 2 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.9 to 8.4

Herm Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: landslides, mountains
Parent material: slope alluvium derived from shale
Elevation: 7,100 to 8,500 feet
Slope: 3 to 25 percent

Climatic data:
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F
Frost-free period: 80 to 100 days

Taxonomic class: Fine, smectitic, frigid Typic Argiustolls

Typical Pedon

Herm loam, 3 to 25 percent slopes; USGS Battlerock topographic quadrangle; 37 degrees 16 minutes 25.1 seconds north latitude and 108 degrees 47 minutes 17.2 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 1 percent gravel.

Oe—0 to1 inch.
A—1 inch to 12 inches; very dark gray (10YR 3/1) loam, black (10YR 2/1) moist; strong very fine granular structure; soft, very friable, slightly sticky, slightly plastic; many fine, many medium, and common coarse roots throughout; noneffervescent; slightly acid (pH 6.2); abrupt smooth boundary.
BA—12 to 15 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky, slightly plastic; many fine, many medium, and common coarse roots throughout; many fine dendritic tubular pores; 10 percent faint clay films on faces of peds; 1 percent gravel; noneffervescent; neutral (pH 6.8); clear smooth boundary.
Bt1—15 to 32 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; strong medium subangular blocky structure; very hard, very firm, moderately sticky, moderately plastic; many fine, many medium, and common coarse roots throughout; many fine dendritic tubular pores; 50 percent prominent clay films on faces of peds; 1 percent gravel; noneffervescent; neutral (pH 6.8); gradual smooth boundary.
Bt2—32 to 54 inches; grayish brown (2.5Y 5/2) clay loam, dark grayish brown (2.5Y 4/2) moist; strong medium subangular blocky structure; very hard, very firm, moderately sticky, moderately plastic; many fine, many medium, and common coarse roots throughout; many fine dendritic tubular pores; 30 percent prominent clay films on faces of peds; 1 percent gravel; noneffervescent; neutral (pH 6.8); gradual smooth boundary.
Bt3—54 to 73 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common fine, common medium, and common coarse roots throughout; 10 percent distinct clay films on faces of peds; 1 percent gravel; noneffervescent; neutral (pH 6.8)

Range in Characteristics

Soil moisture: typic ustic
Mean annual soil temperature: 45 to 49 degrees F
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 35 to 55 percent
Rock fragment content: 0 to 5 percent

A horizon:
Hue: 10YR
Value: 3 to 5 dry; 2 to 3 moist
Chroma: 1 to 3
Texture, fine earth fraction: loam or clay loam
Clay content: 20 to 35 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.3

Bt horizon:
Hue: 10YR or 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 to 6
Texture, fine earth fraction: clay loam or clay
Clay content: 35 to 45 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 7.8

Hope Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: alluvial flats
Parent material: slope alluvium and alluvium derived from shale
Elevation: 4,800 to 5,700 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-silty, carbonatic, mesic Typic Calcigypsids

Typical Pedon

Hope silty clay loam, 1 to 6 percent slopes, USGS Sentinel Peak Southeast topographic quadrangle; 37 degrees 6 minutes 48 seconds north latitude and 108 degrees 47 minutes 42 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 1 percent gravel.

A—0 to 3 inches; light yellowish brown (10YR 6/4) silty clay loam, brown (10YR 5/3) moist; moderate very fine granular structure; soft, very friable, slightly sticky and

slightly plastic; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

Bw—3 to 10 inches; light yellowish brown (10YR 6/4) silty clay loam, brown (10YR 5/3) moist; moderate fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine and few fine roots throughout; few very fine discontinuous tubular pores; 10 percent parachanners; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bky1—10 to 19 inches; light yellowish brown (10YR 6/4) silty clay loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, few fine, and common medium roots throughout; few very fine discontinuous tubular pores; few fine cylindrical gypsum threads; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bky2—19 to 40 inches; pale brown (10YR 6/3) silt loam, light olive brown (2.5Y 5/3) moist; massive; moderately hard, very friable, slightly sticky and slightly plastic; common very fine, few fine, and common medium roots throughout; few very fine discontinuous tubular pores; few fine cylindrical gypsum threads and few medium rounded nests of gypsum throughout; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bky3—40 to 58 inches; pale brown (10YR 6/3) gypsiferous silt loam, olive brown (2.5Y 4/3) moist; massive; moderately hard, very friable, slightly sticky and slightly plastic; common very fine and medium roots throughout; few very fine discontinuous tubular pores; few fine cylindrical gypsum threads and few medium rounded nests of gypsum throughout; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bky4—58 to 80 inches; pale brown (10YR 6/3) silty clay loam, olive brown (2.5Y 4/3) moist; massive; moderately hard, very friable, slightly sticky and slightly plastic; common very fine and medium roots throughout; few very fine discontinuous tubular pores; few fine cylindrical gypsum threads and few medium rounded nests of gypsum throughout; violently effervescent; moderately alkaline (pH 8.0).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to gypsic horizon: 5 to 20 inches
Depth to calcic horizon: 5 to 20 inches
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 20 to 35 percent
Rock fragment content: 0 to 2 percent

A horizon:
Hue: 10YR
Value: 5 or 6 dry or moist
Chroma: 3 to 5
Texture, fine earth fraction: silty clay loam
Clay content: 27 to 35 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 10 to 25 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.9 to 8.4

Bw horizon:
Hue: 10YR
Value: 5 or 6 dry or moist
Chroma: 3 or 4
Texture, fine earth fraction: loam, silt loam or silty clay loam
Clay content: 20 to 35 percent
Fragments: 0 to 2 percent lithic, 0 to 15 percent paralithic
Calcium carbonate equivalent: 10 to 25 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.9 to 8.4

Bky horizon:
Hue: 10YR to 2.5YR
Value: 4 to 6 dry or moist
Chroma: 3 or 4
Texture, fine earth fraction: gypsiferous silty clay loam, gypsiferous silt loam, silt loam, silty clay loam, or loam
Clay content: 20 to 35 percent
Fragments: 0 to 2 percent, lithic, 0 to 15 percent, paralithic
Calcium carbonate equivalent: 20 to 35 percent
Gypsum content: 5 to 25 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.9 to 8.4

Hoskay Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: fan terraces
Parent material: alluvium derived from mixed sources
Elevation: 4,800 to 5,700 feet
Slope: 1 to 10 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine, mixed, superactive, mesic Vertic Natrigypsids

Typical Pedon

Hoskay channery loam, in an area of Hoskay-Patel-Badland complex, 1 to 25 percent slopes; from the adjoining Shiprock Soil Survey Area; USGS Sallies Spring, New Mexico topographic quadrangle; 36 degrees 58 minutes 50 seconds north latitude and 108 degrees 54 minutes 33 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

A—0 to 2 inches; light yellowish brown (10YR 6/4) channery loam, dark yellowish brown (10YR 4/4) moist; moderate thick platy structure parting to moderate very fine granular; soft, very friable, slightly sticky, slightly plastic; common very fine and few fine roots throughout; common very fine discontinuous tubular pores; 15

percent channers and 5 percent gravel; strongly effervescent; moderately alkaline (pH 8.1); clear smooth boundary.

Btkn—2 to 6 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; weak medium prismatic structure; hard, firm, moderately sticky, moderately plastic; common very fine, few fine, and few medium roots throughout; common very fine continuous tubular pores and few planar voids; common thin clay films on faces of peds and lining pores; 5 percent gravel; strongly effervescent, few fine irregular carbonate masses on faces of peds and on undersides of rock fragments; strongly alkaline (pH 8.7); clear smooth boundary.

Btkyn—6 to 14 inches; light yellowish brown (10YR 6/4) clay, yellowish brown (10YR 5/4) moist; moderate medium prismatic structure parting to moderate coarse subangular blocky; hard, firm, moderately sticky, moderately plastic; common very fine and common fine roots throughout; few very fine continuous tubular pores and few planar voids; few thin clay films on faces of peds and lining pores; 5 percent gravel and 5 percent channers; few fine irregular gypsum crystals on faces of peds and in pores; strongly effervescent, few fine irregular carbonates on faces of peds and on undersides of rock fragments; moderately alkaline (pH 8.4); abrupt wavy boundary.

Byk1—14 to 21 inches; light gray (10YR 7/2) parachannery gypsiferous clay loam, light yellowish brown (10YR 6/4) moist; moderate coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine and few fine roots throughout; few very fine continuous tubular pores; 10 percent soft sandstone fragments; 5 percent channers and 5 percent gravel; secondary fine sand-sized gypsum crystals segregated as many fine and medium irregularly shaped accumulations on faces of peds and in pores; strongly effervescent, secondary calcium carbonates segregated as few medium irregularly shaped accumulations on faces of peds and on rock fragments; mildly alkaline (pH 7.8); clear smooth boundary.

Byk2—21 to 27 inches; pale brown (10YR 6/3) parachannery gypsiferous clay loam, brown (10YR 5/3) moist; moderate coarse subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and few fine roots throughout; few very fine continuous tubular pores; 15 percent sandstone parafragments; 5 percent channers and 5 percent gravel; common medium irregular gypsum crystals on faces of peds and few in pores; slightly effervescent, few medium irregular on faces of peds and on rock fragments; mildly alkaline (pH 7.8); clear wavy boundary.

Byk3—27 to 39 inches; pale brown (10YR 6/3) channery clay loam, brown (10YR 5/3) moist; weak coarse subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common very fine and few fine roots throughout; few very fine discontinuous tubular pores; 20 percent soft sandstone parafragments; 10 percent gravel and 10 percent channers; few fine and medium irregular gypsum crystal on faces of peds and on rock fragments; slightly effervescent, very few medium irregular carbonate masses on faces of peds and on rock fragments; moderately alkaline (pH 8.2); abrupt irregular boundary.

Byss—39 to 65 inches; light yellowish brown (2.5Y 6/4) and gray (10YR 6/1) silty clay, yellowish brown (2.5Y 5/4) and gray (10YR 5/1) moist; weak very coarse subangular blocky structure; very hard, very firm, moderately sticky, moderately plastic; few very fine roots; few large krotovinas; 5 percent shale parachanners; few slickensides; few 0.5-inch-wide angled cracks; few coarse sand, and fine gravel-sized primary gypsum (selenite) crystals throughout matrix; slightly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to base of natric horizon: 10 to 25 inches
Depth to gypsic horizon: 10 to 25 inches
Surface fragments: 0 to 10 percent

Particle-size control section (weighted average):
- *Clay content:* 35 to 50 percent
- *Rock fragment content:* 0 to 10 percent

A or E horizons:
- *Hue:* 7.5YR to 10YR
- *Value:* 6 dry, 4 or 5 moist
- *Chroma:* 3 or 4
- *Texture, fine earth fraction:* loam
- *Clay content:* 18 to 27 percent
- *Fragments:* 10 to 30 percent
- *Calcium carbonate equivalent:* 5 to 10 percent
- *Gypsum content:* 0 to 1 percent
- *Electrical conductivity:* 2 to 4 mmhos/cm
- *Sodium adsorption ratio:* 0 to 5
- *Reaction:* pH 7.9 to 8.4

Btkn horizon:
- *Hue:* 7.5YR to 10YR
- *Value:* 5 or 6 dry; 4 or 5 moist
- *Chroma:* 3 or 4
- *Texture, fine earth fraction:* clay loam or clay
- *Clay content:* 35 to 50 percent
- *Fragments:* 0 to 15 percent
- *Calcium carbonate equivalent:* 5 to 10 percent
- *Gypsum content:* 0 to 1 percent
- *Electrical conductivity:* 2 to 4 mmhos/cm
- *Sodium adsorption ratio:* 13 to 30
- *Reaction:* pH 8.5 to 9.0

Btkyn horizon:
- *Hue:* 7.5YR to 10YR
- *Value:* 6 dry, 4 or 5 moist
- *Chroma:* 3 or 4
- *Texture, fine earth fraction:* clay loam or clay
- *Clay content:* 35 to 50 percent
- *Fragments:* 0 to 15 percent
- *Calcium carbonate equivalent:* 5 to 10 percent
- *Gypsum content:* 5 to 10 percent
- *Electrical conductivity:* 4 to 8 mmhos/cm
- *Sodium adsorption ratio:* 13 to 30
- *Reaction:* pH 7.9 to 9.0

Byk1 and Byk2 horizons:
- *Hue:* 10YR
- *Value:* 6 to 8 dry; 5 or 6 moist
- *Chroma:* 2 to 4

Texture, fine earth fraction: gypsiferous clay loam, gypsiferous clay
Clay content: 35 to 50 percent
Fragments: 0 to 15 percent, lithic, 0 to 15 paralithic
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 15 to 25 percent
Electrical conductivity: 8 to 16 mmhos/cm
Sodium adsorption ratio: 5 to 30
Reaction: pH 7.4 to 8.4

Byk3 and Byss horizons:
Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 1 to 4
Texture, fine earth fraction: stratified sandy clay loam to silty clay
Clay content: 30 to 50 percent
Fragments: 0 to 30 percent, lithic, 0 to 15 paralithic
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 5 to 10 percent
Electrical conductivity: 8 to 16 mmhos/cm
Sodium adsorption ratio: 5 to 30
Reaction: pH 7.9 to 8.4

Ives Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: drainageways, flood plains
Parent material: alluvium derived from mixed sources
Elevation: 4,800 to 5,700 feet
Slope: 1 to 3 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, mesic Typic Torrifluvents

Typical Pedon

Ives sandy loam, 1 to 3 percent slopes; USGS Mariano Wash East topographic quadrangle; 37 degrees 9 minutes 10.51 seconds north latitude and 108 degrees 45 minutes 9.93 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to1 inch; dark yellowish brown (10YR 4/4) sandy loam, dark yellowish brown (10YR 4/4) moist; weak coarse platy structure; soft, very friable, nonsticky, nonplastic; violently effervescent; slightly alkaline (pH 7.8); gradual smooth boundary.

C1—1 inch to 4 inches; yellowish brown (10YR 5/6) sandy loam, yellowish brown (10YR 5/4) moist; weak coarse platy; soft, very friable, nonsticky, nonplastic; common very fine and common fine roots throughout; violently effervescent; slightly alkaline (pH 7.8); gradual smooth boundary.

C2—4 to 24 inches; light yellowish brown (10YR 6/4) stratified loamy sand to sandy loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky, nonplastic; common very fine and common fine roots throughout; common very fine dendritic tubular pores; violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

C3—24 to 33 inches; light yellowish brown (10YR 6/4) stratified coarse sandy loam, yellowish brown (10YR 5/4) moist; single grain; loose, loose, nonsticky, nonplastic; common very fine and common fine roots throughout; 5 percent gravel, 2 percent cobbles, and 1 percent stones; violently effervescent; (pH 8.0); abrupt smooth boundary.

C4—33 to 58 inches; yellowish brown (10YR 5/4) stratified sandy loam, yellowish brown (10YR 5/4) moist; massive; very friable, soft, nonsticky, nonplastic; common very fine and common fine roots throughout; common very fine dendritic tubular pores; violently effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.

C5—58 to 80 inches; brown (7.5YR 5/4) stratified loamy sand to sandy loam, brown (7.5YR 4/4) moist; massive; soft, very friable, nonsticky, nonplastic; common very fine and common fine roots throughout; common very fine dendritic tubular pores; 2 percent fine irregular salt masses throughout; violently effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 56 degrees F
Surface fragments: 0 to 15 percent

Particle-size control section (weighted average):
Clay content: 10 to 15 percent
Rock fragment content: 0 to 10 percent

A horizon:
Hue: 10YR
Value: 4 to 7 dry; 4 or 5 moist
Chroma: 3 to 6
Texture, fine earth fraction: sandy loam
Clay content: 8 to 20 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 0 to 10 percent
Gypsum content: 0 to 3 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.4 to 8.4

Jeddito Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: terraces
Parent material: alluvium derived from sandstone and shale
Elevation: 4,800 to 5,700 feet
Slope: 0 to 3 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches

Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, mesic Typic Torriorthents

Typical Pedon

Jeddito loamy fine sandy, 0 to 2 percent slopes, from the adjoining Shiprock Soil Survey Area; USGS Sheep Springs topographic quadrangle; 36 degrees 14 minutes 4 seconds north latitude and 108 degrees 44 minutes 52 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 5 inches; light brown (7.5YR 6/4) loamy fine sand, brown (7.5YR 5/4) moist; moderate thin platy structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; few fine roots; slightly effervescent; moderately alkaline; clear wavy boundary.

C1—5 to 11 inches; brown (7.5YR 5/4) loamy sand, brown (7.5YR 4/4) moist; weak coarse subangular blocky structure parting to weak fine granular; soft, very friable, nonsticky, nonplastic; few fine roots; slightly effervescent; moderately alkaline; clear wavy boundary.

C2—11 to 16 inches; brown (7.5YR 5/4) loamy sand, brown (7.5YR 4/4) moist; weak coarse subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; few fine and very fine roots; slightly effervescent; mildly alkaline; clear smooth boundary.

C3—16 to 21 inches; brown (7.5YR 5/4) fine sandy loam, brown (7.5YR 4/4) moist; weak coarse subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; few very fine roots; few very fine tubular pores; few lenses of very fine sandy loam; slightly effervescent; moderately alkaline; clear smooth boundary.

C4—21 to 27 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few fine and very fine tubular pores; few thin strata of fine sandy loam; slightly effervescent; moderately alkaline; clear wavy boundary.

C5—27 to 33 inches; brown (7.5YR 5/4) fine sandy loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; few very fine tubular pores; few lamina of clay loam; slightly effervescent; moderately alkaline; gradual wavy boundary.

C6—33 to 42 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 5/4) moist; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; few fine and very fine roots; few fine and very fine irregularly shaped pores; slightly effervescent; moderately alkaline; clear smooth boundary.

C7—42 to 70 inches; light brown (7.5YR 6/4) fine sandy loam, brown (7.5YR 5/4) moist; weak medium subangular blocky structure; soft, friable, slightly sticky, slightly plastic; few very fine roots; few fine and very fine irregularly shaped pores; common thin strata of clay loam; slightly effervescent; mildly alkaline.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Surface fragments: 0 to 10 percent

Particle-size control section (weighted average):
Clay content: 8 to 18 percent
Rock fragment content: 0 to 10 percent

A horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: loamy fine sand
Clay content: 5 to 10 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 1 to 3 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

C horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: stratified loamy sand to clay loam
Clay content(weighted average): 8 to 18 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 2 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 13
Reaction: pH 7.4 to 9.0

C horizon:
Hue: 10YR or 7.5YR
Value: 4 to 7 dry; 4 or 5 moist
Chroma: 3 to 6
Texture, fine earth fraction: stratified loamy sand to sandy loam
Clay content: 10 to 15 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 0 to 10 percent
Gypsum content: 0 to 3 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.9 to 8.4

Juanalo Series

Depth class: shallow
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: mesas, structural benches
Parent material: residuum derived from limestone
Elevation: 4,800 to 5,700 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Loamy, mixed, superactive, calcareous, mesic Lithic Torriorthents

Typical Pedon

Juanalo gravelly fine sandy loam, 1 to 6 percent slopes; USGS Sentinel Peak Southwest topographic quadrangle; 37 degrees 4 minutes 13.69 seconds north latitude and 108 degrees 54 minutes 59.54 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 50 percent channers, 2 percent flagstones.

A1—0 to 1 inch; light yellowish brown (10YR 6/4) gravelly fine sandy loam, yellowish brown (10YR 5/4) moist; moderate very fine granular structure; soft, very friable, nonsticky, nonplastic; 25 percent gravel, 1 percent channers; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

A2—1 inch to 3 inches; light yellowish brown (10YR 6/4) loam, yellowish brown (10YR 5/4) moist; moderate very fine granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine roots throughout; common fine vesicular pores; 2 percent channers; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bw—3 to 9 inches; yellowish brown (10YR 5/4) loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common very fine roots throughout; common fine vesicular pores; many distinct clay bridges on the faces of peds; 5 percent gravel, 1 percent channers; violently effervescent; moderately alkaline (pH 8.4); abrupt irregular boundary.

Bk—9 to 11 inches; very pale brown (10YR 7/4) very channery loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, slightly sticky, slightly plastic; common very fine roots around rocks; 10 percent gravel, 40 percent channers; 1-2 mm calcium carbonate coats on the bottom of coarse fragments; violently effervescent; moderately alkaline (pH 8.4); abrupt irregular boundary.

R—11 inches; Juana Lopez Limestone, member of the Mancos Shale formation.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Surface fragments: 35 to 70 percent

Particle-size control section (weighted average):
- *Clay content:* 18 to 35 percent
- *Rock fragment content:* 0 to 35 percent

A horizon:
- *Hue:* 10YR
- *Value:* 5 or 6 dry; 4 or 5 moist
- *Chroma:* 4 or 5
- *Texture, fine earth fraction:* loam or fine sandy loam
- *Clay content:* 10 to 27 percent
- *Fragments:* 5 to 35 percent
- *Calcium carbonate equivalent:* 15 to 35 percent
- *Gypsum content:* 0 to 1 percent
- *Electrical conductivity:* 0 to 2 mmhos/cm
- *Sodium adsorption ratio:* 0 to 2
- *Reaction:* pH 7.9 to 8.4

Bw horizon:
- *Hue:* 10YR
- *Value:* 4 to 6 moist or dry

Chroma: 4 or 5
Texture, fine earth fraction: silt loam, loam or clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 15 to 35 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 2
Reaction: pH 7.9 to 8.4

Bk horizon:
Hue: 10YR
Value: 6 or 7 dry, 5 or 6 moist
Chroma: 4 or 5
Texture, fine earth fraction: loam, silt loam or clay loam
Clay content: 18 to 35 percent
Fragments: 15 to 60 percent, mainly channers and gravel
Calcium carbonate equivalent: 20 to 70 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 2
Reaction: pH 7.9 to 8.4

Katzine Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: mountains, hills and fans
Parent material: slope alluvium and colluvium derived from diorite
Elevation: 5,400 to 7,400 feet
Slope: 15 to 60 percent

Climatic data:
Mean annual precipitation: 10 to 16 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 100 to 135 days

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Aridic Calciustepts

Typical Pedon

Katzine very gravelly fine sandy loam, 15 to 45 percent slopes; USGS Battlerock topographic quadrangle; 37 degrees 15 minutes 41.58 seconds north latitude and 108 degrees 58 minutes 51.63 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 35 percent gravel, 5 percent cobbles, 1 percent stones, and 1 percent boulders.

A—0 to 2 inches; brown (7.5YR 5/3) very gravelly fine sandy loam, dark brown (7.5YR 3/3) moist; moderate fine granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine roots throughout; 30 percent gravel, 5 percent cobbles, 5 percent stones, and 1 percent boulders; strongly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.
Bw—2 to 7 inches; brown (7.5YR 5/4) very gravelly loam, brown (7.5YR 4/3)

moist; moderate medium granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine and common medium roots throughout; 25 percent gravel, 5 percent cobbles, 5 percent stones, 1 percent boulders; strongly effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.

Bk1—7 to 23 inches; light brown (7.5YR 6/3) extremely gravelly sandy loam, brown (7.5YR 5/3) moist; single grain; loose, loose, nonsticky, nonplastic; common medium, common coarse, and common very coarse roots at the top of horizon; 10 percent fine platy carbonate masses; 50 percent gravel, 10 percent cobbles, 5 percent stones, and 1 percent boulders; violently effervescent; moderately alkaline (pH 8.0); diffuse smooth boundary.

Bk2—23 to 42 inches; pink (7.5YR 7/3) extremely gravelly sandy loam, light brown (7.5YR 6/3) moist; single grain; loose, loose, nonsticky, nonplastic; common medium roots throughout; 70 percent fine platy carbonate masses; 50 percent stones, 10 percent cobbles, 5 percent stones, and 1 percent boulders; violently effervescent; moderately alkaline (pH 8.0); diffuse smooth boundary.

Bk3—42 to 58 inches; pink (7.5YR 7/3) extremely gravelly sandy loam; light brown (7.5YR 6/3) moist; single grain; loose, loose, nonsticky, nonplastic; common medium roots throughout; 70 percent fine platy carbonate masses; 50 percent gravel, 10 percent cobbles, 5 percent stones, and 1 percent boulders; violently effervescent; moderately alkaline (pH 8.2); diffuse smooth boundary.

Bk4—58 to 80 inches; pink (7.5YR 7/3) extremely gravelly sandy loam; light brown (7.5YR 6/3) moist; single grain; loose, loose, nonsticky, nonplastic; common medium roots throughout; 70 percent fine platy carbonate masses; 50 percent gravel, 10 percent cobbles, 5 percent stones, and 1 percent boulders; violently effervescent; moderately alkaline (pH 8.2); diffuse smooth boundary.

Range in Characteristics

Soil moisture: ustic aridic and aridic ustic
Mean annual soil temperature: 48 to 54 degrees F
Depth to calcic horizon: 6 to 15 inches
Surface fragments: 30 to 80 percent

Particle-size control section (weighted average):
Clay content: 10 to 18 percent
Rock fragment content: 35 to 60 percent

A horizon:
Hue: 7.5YR
Value: 4 or 5 dry; 3 or 4 moist
Chroma: 2 to 4
Texture, fine earth fraction: fine sandy loam or loam
Clay content: 10 to 20 percent
Fragments: 35 to 60 percent, mainly gravel and cobble
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Bw horizon:
Hue: 7.5YR
Value: 4 or 5 dry; 3 or 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam or sandy loam

Clay content: 10 to 18 percent
Fragments: 35 to 60 percent, mainly gravel and cobble
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Bk horizon:
Hue: 7.5YR to 10YR
Value: 4 to 7 dry; 3 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: sandy loam or loam
Clay content: 10 to 18 percent
Fragments: 35 to 70 percent, mainly gravel and cobble
Calcium carbonate equivalent: 15 to 25 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.9 to 8.4

The soils mapped as Katzine in map unit 135 are taxadjuncts to the series. The Katzine series is in an ustic moisture regime that borders on aridic. The Katzine soils in map unit 135 are in an aridic moisture regime that borders ustic. This difference, however, does not significantly affect the use or management of the soils. In this map unit, 135, Katzine soils are loamy-skeletal, mixed, superactive, mesic Ustic Haplocalcids.

Kava Series

Depth class: shallow
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: fan piedmonts, knobs
Parent material: residuum derived from shale
Elevation: 4,800 to 5,700 feet
Slope: 1 to 12 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Clayey, smectitic, calcareous, mesic, shallow Vertic Torriorthents

Typical Pedon

Kava silty clay loam, in an area of Cowboy-Kava complex, 1 to 3 percent slopes; USGS Sentinel Peak Southwest topographic quadrangle; 37 degrees 6 minutes 55 seconds north latitude and 108 degrees 58 minutes 31 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 5 percent channers.

A—0 to 2 inches; light yellowish brown (2.5Y 6/3) silty clay loam, olive brown (2.5Y 4/3) moist; strong very fine granular structure; soft, very friable, moderately sticky and very plastic; common very fine and few fine roots throughout; 2 percent

sandstone gravel; slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

C1—2 to 5 inches; light yellowish brown (2.5Y 6/3) clay, olive brown (2.5Y 4/3) moist; moderate very coarse prismatic structure parting to weak medium subangular blocky; moderately hard, firm, very sticky and very plastic; common very fine roots throughout; few distinct pressure faces on faces of peds; few fine irregular nests and masses of gypsum; 1 percent sandstone gravel; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

C2—5 to 10 inches; light yellowish brown (2.5Y 6/3) silty clay, olive brown (2.5Y 4/3) moist; moderate very coarse prismatic structure parting to weak medium subangular blocky; hard, very firm, very sticky and very plastic; common very fine roots between peds and throughout; few distinct pressure faces on faces of peds; common fine irregular nests and few fine irregular masses of gypsum; slightly effervescent; moderately alkaline (pH 8.4); abrupt wavy boundary.

C3—10 to 15 inches; light yellowish brown (2.5Y 6/3) clay, olive brown (2.5Y 4/3) moist; moderate very coarse prismatic structure parting to weak medium subangular blocky; hard, very firm, very sticky and very plastic; common very fine roots between peds; few distinct pressure faces on faces of peds; few fine irregular nests and masses of gypsum; slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Cr—15 to 27 inches; soft Mancos shale.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Surface fragments: 0 to 15 percent

Particle-size control section (weighted average):
Clay content: 40 to 60 percent
Rock fragment content: 0 to 5 percent

A horizon:
Hue: 2.5Y
Value: 5 or 6 dry; 3 or 4 moist
Chroma: 3
Texture, fine earth fraction: silty clay loam
Clay content: 27 to 40 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 1 to 13
Reaction: moderately alkaline pH 7.9 to 8.4

C horizon:
Hue: 2.5Y
Value: 5 or 6 dry; 3 or 4 moist
Chroma: 2 or 3
Texture, fine earth fraction: silty clay or clay
Clay content: 40 to 60 percent
Fragments: 0 to 5 percent, lithic, 5 to 15, paralithic
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 2 to 8 mmhos/cm
Sodium adsorption ratio: 13 to 30

Reaction: moderately alkaline pH 7.9 to 8.4

Kimbeto Series

Depth class: very deep and deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: plateaus, structural benches
Parent material: alluvium, eolian material, and residuum derived from sandstone
Elevation: 4,800 to 5,700 feet
Slope: 0 to 5 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Calciargids

Typical Pedon

Kimbeto loamy fine sand, in an area of Kimbeto loamy fine sand, 0 to 4 percent slopes; from the adjoining Shiprock Soil Survey Area; USGS Burnham Trading Post topographic quadrangle; 36 degrees 16 minutes 54 seconds north latitude and 108 degrees 36 minutes 38 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 3 inches; light brown (7.5YR 6/4) loamy fine sand, brown (7.5YR 4/4) moist; weak medium platy structure parting to weak fine granular; soft, very friable, nonsticky, nonplastic; few medium and common fine and very fine roots; slightly effervescent; mildly alkaline (pH 7.6); clear smooth boundary.

Bw—3 to 10 inches; light brown (7.5YR 6/4) fine sandy loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; common fine and very fine roots throughout; few very fine tubular pores; slightly effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2Btkn—10 to 18 inches; brown (7.5YR 5/4) sandy clay loam, brown (7.5YR 4/4) moist; weak medium prismatic structure parting to moderate coarse subangular blocky; hard, firm, slightly sticky, moderately plastic; few fine and few very fine roots throughout; few fine and common very fine tubular pores; few thin clay films on faces of peds and lining pores, and clay bridging sand grains; strongly effervescent, few fine rounded soft carbonate masses; very strongly alkaline (pH 9.2); clear wavy boundary.

2Bkn1—18 to 22 inches; very pale brown (10YR 7/4) fine sandy loam, yellowish brown (10YR 5/6) moist; moderate coarse subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and common very fine roots throughout; few very fine tubular pores; violently effervescent, common medium irregular carbonate masses; strongly alkaline (pH 8.8); clear smooth boundary.

2Bkn2—22 to 29 inches; white (10YR 8/2) fine sandy loam, very pale brown (10YR 7/4) moist; moderate coarse subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common fine and common very fine roots throughout; few very fine tubular pores; 10 percent soft sandstone fragments; 5 percent gravel; violently effervescent, common fine and medium irregular carbonate masses on rock fragments; strongly alkaline (pH 9.0); clear wavy boundary.

3Bkn—29 to 42 inches; brownish yellow (10YR 6/6) loamy fine sand, yellowish brown (10YR 5/6) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; few fine and common very fine roots; 20 percent soft sandstone fragments; 5 percent channers; violently effervescent, few fine irregular carbonate masses on the undersides of rock fragments; strongly alkaline (pH 8.8); clear smooth boundary.
3Cr—42 inches; soft sandstone bedrock.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 57 degrees F
Depth to restrictive feature: 40 to more than 60 inches to bedrock
Depth to calcic horizon: 10 to 31 inches

Particle-size control section (weighted average):
Clay content: 18 to 27 percent
Rock fragment content: 0 to 10 percent

A horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: fine sandy loam or loamy fine sand
Clay content: 10 to 20 percent
Fragments: 0 to 15 percent gravel
Calcium carbonate equivalent: 3 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 7.8

Bw horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: fine sandy loam or very fine sandy loam
Clay content: 10 to 20 percent
Fragments: 0 to 15 percent gravel
Calcium carbonate equivalent: 3 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

Btkn horizon:
Hue: 7.5YR to 10YR
Value: 4 to 6 dry; 4 or 5 moist
Chroma: 3 to 6
Texture, fine earth fraction: sandy clay loam, fine sandy loam or loam
Clay content: 18 to 27 percent
Fragments: 0 to 20 percent gravel
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 to 2 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 9.4

Bkn horizon:
Hue: 7.5YR to 10YR
Value: 6 to 8 dry; 4 to 7 moist
Chroma: 2 to 6
Texture, fine earth fraction: fine sandy loam or loam
Clay content: 18 to 27 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 10 to 30 percent
Gypsum content: 0 to 2 percent
Electrical conductivity: 4 to 16 mmhos/cm
Sodium adsorption ratio: 5 to 30
Reaction: pH 7.4 to 9.0

BCk horizon:
Hue: 10YR to 2.5Y
Value: 6 to 8 dry; 4 to 7 moist
Chroma: 2 to 6
Texture, fine earth fraction: loam, sandy clay loam loamy fine sand or fine sandy loam
Clay content: 20 to 27 percent
Fragments: 10 to 35 percent
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 2 to 5 percent
Electrical conductivity: 8 to 16 mmhos/cm
Sodium adsorption ratio: 13 to 30
Reaction: pH 7.4 to 9.0

Kimnoli Series

Depth class: very shallow
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: cuestas, structural benches
Parent material: eolian material and slope alluvium from sandstone
Elevation: 4,800 to 5,700 feet
Slope: 2 to 10 percent

Climatic data:
Mean annual precipitation: 8 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Loamy, mixed, active, mesic Lithic Haplargids

Typical Pedon

Kimnoli loamy fine sand in an area of Tohona-Kimnoli-Claysprings complex, 2 to 45 percent slopes; from the adjoining Shiprock Soil Survey Area, USGS Nose Rock topographic quadrangle; 36 degrees 58 minutes 5 seconds north latitude and 109 degrees 1 minute 39 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 4 inches; light brown (7.5YR 6/4) loamy fine sand, brown (7.5YR 5/4) moist; weak thick platy structure parting to single grain; loose, loose, nonsticky, nonplastic; common very fine and few fine roots throughout; few very fine

vesicular pores; slightly effervescent; mildly alkaline (pH 7.6); clear smooth boundary.

Btk—4 to 9 inches; light brown (7.5YR 6/4) fine sandy loam, dark brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common very fine and few fine roots throughout; few very fine tubular pores; few thin clay films lining pores and bridging sand grains; 5 percent gravel; strongly effervescent, few fine irregular carbonate masses on faces of peds and on undersides of rock fragments; moderately alkaline (pH 8.2); abrupt smooth boundary.

2R—9 inches; sandstone bedrock.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 52 to 57 degrees F
Depth to restrictive feature: 7 to 10 inches to bedrock (lithic)

Particle-size control section (weighted average):
Clay content: 18 to 25 percent
Rock fragment content: 0 to 10 percent

A horizon:
Hue: 7.5YR to 10YR
Value: 4 to 6 dry; 3 or 5 moist
Chroma: 3 to 6
Texture, fine earth fraction: loamy fine sand
Clay content: 4 to 8 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 1 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.4 to 7.8

Bt horizon:
Hue: 7.5YR to 10YR
Value: 4 to 6 dry; 3 or 4 moist
Chroma: 3 to 6
Texture, fine earth fraction: sandy loam, sandy clay loam or fine sandy loam
Clay content: 18 to 25 percent
Fragments: 0 to 10 percent gravel
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 1 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.9 to 8.4

Kucu Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: paleoterraces, fan remnants
Parent material: eolian material derived from sandstone over very old alluvium derived from mixed sources
Elevation: 6,200 to 7,400 feet

Slope: 3 to 9 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Fine-silty, mixed, superactive, mesic Calcidic Haplustalfs

Typical Pedon

Kucu loam, in an area of Wetherill-Kucu complex, 3 to 6 percent slopes; USGS Red Horse Gulch topographic quadrangle; 37 degrees 4 minutes 27.35 seconds north latitude and 108 degrees 20 minutes 47.49 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 5 percent gravel, 1 percent cobbles.

A—0 to 2 inches; brown (7.5YR 4/4), loam, brown (7.5YR 4/3), moist; weak very fine granular and weak thick platy structure; soft, very friable, nonsticky, nonplastic; many very fine roots throughout; many very fine vesicular pores; 5 percent gravel and 1 percent cobbles; slightly alkaline, (pH 7.4); clear smooth boundary.

BA—2 to 5 inches; brown (7.5YR 4/4), clay loam, brown (7.5YR 4/4), moist; weak thick platy structure; slightly hard, friable, slightly sticky, slightly plastic; common fine roots and common medium roots and many very fine roots throughout; many very fine vesicular pores; 10 percent gravel and 1 percent cobbles; slightly alkaline, (pH 7.6); clear smooth boundary.

Bt—5 to 15 inches; brown (7.5YR 4/4), clay loam, brown (7.5YR 4/4), moist; moderate medium subangular blocky structure; hard, very firm, very sticky, very plastic; common fine roots and common very fine roots throughout; common fine dendritic tubular and many very fine dendritic tubular pores; 1 percent fine irregular carbonate masses throughout; 10 percent rounded gravel and 1 percent rounded cobbles; neutral, (pH 7.0); clear smooth boundary.

2Bk1—15 to 22 inches; pink (7.5YR 8/4), very gravelly sandy loam, pink (7.5YR 8/4), moist; massive; slightly hard, friable, nonsticky, nonplastic; few very fine roots throughout; few very fine dendritic tubular pores; 100 percent carbonate masses; 40 percent rounded gravel and 1 percent rounded cobbles; violently effervescent; moderately alkaline, (pH 8.4); gradual wavy boundary.

2Bk2—22 to 29 inches; pink (7.5YR 8/4) fractured petrocalcic horizon, very pale brown (10YR 7/3) moist; massive, very hard, very firm, nonsticky and nonplastic; 20 percent pink (7.5YR 8/4) very gravelly sandy loam in cracks, very pale brown (10YR 7/3) moist; very few fine roots in cracks; common vertical cracks; 80 percent calcium carbonate; imbedded in the petrocalcic fragments is 40 percent rounded gravel, 1 percent rounded cobbles and 1 percent rounded stones; very strongly cemented; the tops of the petrocalcic fragments have troweled surfaces; violently effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

2Bk3—29 to 38 inches; very pale brown (10YR 8/2), very gravelly sandy loam, very pale brown (10YR 7/4), moist; massive; slightly hard, friable, nonsticky, nonplastic; few very fine roots throughout; few very fine dendritic tubular pores; 100 percent carbonate masses; 50 percent gravel and 1 percent rounded cobbles; violently effervescent; moderately alkaline, (pH 8.4); gradual broken boundary.

2BC—38 to 80 inches; light yellowish brown (10YR 6/4), extremely gravelly sandy loam, yellowish brown (10YR 5/4), moist; massive; slightly hard, friable, nonsticky, nonplastic; carbonate concretions on bottom of rock fragments; 65 percent gravel and 5 percent rounded cobbles, and 1 percent rounded stones; slightly effervescent; moderately alkaline, (pH 8.2).

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 48 to 52 degrees F
Depth to calcic horizon: 10 to 20 inches
Surface fragments: 0 to 15 percent

Particle-size control section (weighted average):
- *Clay content:* 27 to 35 percent
- *Rock fragment content:* 0 to 15 percent

A horizon:
- *Hue:* 7.5YR
- *Value:* 3 or 4 dry or moist
- *Chroma:* 3 or 4
- *Texture, fine earth fraction:* loam
- *Clay content:* 10 to 20 percent
- *Fragments:* 0 to 10 percent
- *Calcium carbonate equivalent:* 0 to 5 percent
- *Gypsum content:* 0 to 1 percent
- *Electrical conductivity:* 0 to 2 mmhos/cm
- *Sodium adsorption ratio:* 0 to 5
- *Reaction:* pH 6.6 to 7.8

Bt horizon:
- *Hue:* 7.5YR
- *Value:* 4 or 5 dry or moist
- *Chroma:* 4 or 5
- *Texture, fine earth fraction:* loam, silt loam or clay loam
- *Clay content:* 20 to 35 percent
- *Fragments:* 0 to 15 percent
- *Calcium carbonate equivalent:* 0 to 5 percent
- *Gypsum content:* 0 to 1 percent
- *Electrical conductivity:* 0 to 2 mmhos/cm
- *Sodium adsorption ratio:* 0 to 5
- *Reaction:* pH 6.6 to 7.8

2Bk1 and 2Bk2 horizon:
- *Hue:* 7.5YR
- *Value:* 8 dry; 7 or 8 moist
- *Chroma:* 2 to 4
- *Texture, fine earth fraction:* sandy loam or loam
- *Clay content:* 10 to 20 percent
- *Fragments:* 35 to 80 percent, mainly gravel
- *Calcium carbonate equivalent:* 50 to 80 percent
- *Gypsum content:* 0 to 1 percent
- *Electrical conductivity:* 0 to 2 mmhos/cm
- *Sodium adsorption ratio:* 0 to 5
- *Reaction:* pH 7.9 to 8.4

2Bk3 horizon:
- *Hue:* 10YR
- *Value:* 8 dry; 7 moist
- *Chroma:* 2 to 4
- *Texture, fine earth fraction:* sandy loam or loam
- *Clay content:* 10 to 20 percent
- *Rock fragments:* 35 to 65 percent, mainly gravel

Calcium carbonate equivalent: 10 to 35 percent
Gypsum content: 0 to 2 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Kwiavu Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: mountains
Parent material: slope alluvium derived from diorite
Elevation: 7,100 to 8,500 feet
Slope: 6 to 35 percent

Climatic data:
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F
Frost-free period: 80 to 100 days

Taxonomic class: Fine-loamy, mixed, superactive, frigid Typic Haplustalfs

Typical Pedon

Kwiavu loam, in an area of Towaoc-Kwiavu complex, 6 to 35 percent slopes; USGS Battlerock topographic quadrangle; 37 degrees 16 minutes 30.4 seconds north latitude and 108 degrees 45 minutes 52.4 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 10 percent gravel, 5 percent cobbles, 1 percent stones.

A1—0 to 2 inches; dark grayish brown (10YR 4/2) loam, dark brown (10YR 3/3) moist; moderate fine granular structure; soft, very friable, slightly sticky, slightly plastic; common fine and common very fine roots throughout; 5 percent gravel, 1 percent cobbles, and 1 percent stones; slightly acid, (pH 6.4); abrupt smooth boundary.

A2—2 to 9 inches; grayish brown (10YR 5/2) loam, dark brown (10YR 3/3) moist; weak medium subangular blocky parting to moderate fine granular; slightly hard, friable, slightly sticky, slightly plastic; common fine, and many very fine roots throughout; 5 percent diorite gravel, 5 percent diorite cobbles, and 1 percent diorite stones; slightly acid, (pH 6.2); clear smooth boundary.

BAt—9 to 15 inches; brown (7.5YR 5/4) stony loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common fine and common medium roots throughout; common very fine dendritic tubular pores; 15 percent discontinuous distinct clay films on faces of peds; 5 percent diorite gravel, 5 percent diorite cobbles, and 5 percent diorite stones; slightly acid, (pH 6.4); clear smooth boundary.

Bt1—15 to 32 inches; brown (7.5YR 5/4) stony loam, brown (7.5YR 4/4) moist; strong medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; common fine roots throughout and common medium roots throughout; common very fine dendritic tubular pores; 80 percent continuous prominent clay films on faces of peds; 5 percent diorite paragravel, 10 percent diorite paracobbles, and 10 percent diorite parastones, 5 percent diorite gravel, 5 percent diorite cobbles, and 5 percent diorite stones; slightly acid, (pH 6.4); gradual smooth boundary.

Bt2—32 to 41 inches; brown (7.5YR 5/4) stony loam, brown (7.5YR 4/4) moist; strong medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and few medium roots throughout; few very fine dendritic tubular pores; 80 percent continuous prominent clay films on faces of peds; 5 percent diorite paragravel, 10 percent paracobbles, and 10 percent diorite parastones, 5 percent diorite gravel, 5 percent diorite cobbles, and 5 percent diorite stones; neutral, (pH 6.6); clear smooth boundary.

Bt3—41 to 60 inches; brown (7.5YR 5/4) stony loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few fine and few medium roots throughout; few very fine dendritic tubular pores; 80 percent continuous prominent clay films on faces of peds; 5 percent diorite paragravel, 10 percent diorite paracobbles, and 10 percent diorite parastones, 5 percent diorite gravel, 5 percent diorite cobbles, and 5 percent diorite stones; neutral, (pH 7.0);

Range in Characteristics

Soil moisture: typic ustic
Mean annual soil temperature: 44 to 47 degrees F
Surface fragments: 0 to 25 percent

Particle-size control section (weighted average):
Clay content: 22 to 32 percent
Rock fragment content: 0 to 35 percent

A horizon:
Hue: 7.5YR to 10YR
Value: 4 or 5 dry; 3 moist
Chroma: 2 or 3
Texture, fine earth fraction: loam
Clay content: 10 to 20 percent
Fragments: 0 to 30 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.3

Bt horizon:
Hue: 7.5YR
Value: 4 or 5 dry 4 to 6 moist
Chroma: 4 to 6
Texture, fine earth fraction: clay loam or loam
Clay content: 18 to 35 percent
Fragments: 0 to 35 percent
Parafragments: 0 to 35 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.3

Lazear Series

Depth class: shallow
Drainage class: well

Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: mesas
Parent material: residuum derived from sandstone and shale
Elevation: 6,200 to 7,400 feet
Slope: 12 to 40 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Loamy, mixed, superactive, calcareous, mesic Aridic Lithic Ustorthents

Typical Pedon

Lazear very stony loam, in an area of Lazear-Rock outcrop complex, 12 to 65 percent slopes, from the adjoining La Plata County Area, Colorado, Soil Survey; USGS Mormon Reservoir topographic quadrangle; 37 degrees 8 minutes 39 seconds north latitude and 108 degrees 11 minutes 39 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 5 percent gravel, 10 percent cobbles, 20 percent stones.

A—0 to 5 inches; brown (7.5YR 5/4) stony loam, brown (7.5YR 4/4) moist; weak fine granular structure; soft, very friable, nonsticky, nonplastic; 10 percent gravel and 15 percent stones and cobbles; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
AC—5 to 8 inches; light yellowish brown (10YR 6/4) loam, brown 10YR 5/3) moist; weak fine subangular blocky structure parting to moderate fine granular; soft, very friable, slightly sticky, slightly plastic; 5 percent gravel; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
C—8 to 15 inches; very pale brown (10YR 8/4) loam, light yellowish brown (10YR 6/4) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; 10 percent gravel; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.
R—15 inches; fractured, calcareous sandstone.

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Surface fragments: 15 to 50 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 35 percent

A horizon:
Hue: 7.5YR to 10YR
Value: 5 to 7 dry; 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam
Clay content: 15 to 20 percent
Fragments: 10 to 35 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm

Sodium adsorption ratio: 0
Reaction: pH 7.4 to 9.0

AC or C horizon:
Hue: 7.5YR to 2.5Y
Value: 6 to 8 dry; 5 to 7 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam or clay loam
Clay content: 15 to 32 percent
Fragments: 10 to 30 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 9.0

The soils in this area have been correlated as Lazear to facilitate joining with La Plata County Area, Colorado. The soils mapped as Lazear are taxadjuncts to the series. The Lazear series is in an aridic moisture regime that borders ustic. The soils mapped as Lazear in this area are in an ustic moisture regime that borders aridic. This difference, however, does not significantly affect the use or management of the soils. In this survey area the Lazear soils are loamy, mixed, superactive, calcareous, mesic Lithic Aridic Ustorthents.

Lillings Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: flood plains
Parent material: alluvium derived from shale
Elevation: 5,400 to 6,200 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Fine-silty, mixed, superactive, calcareous, mesic Ustic Torrifluvents

Typical Pedon

Lillings silt loam, sodic, 1 to 3 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Cortez topographic quadrangle, 37 degrees 20 minutes 18 seconds north latitude and 108 degrees 33 minutes 19 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 1 percent gravel.

A—0 to 2 inches; pale brown (10YR 6/3) silt loam, dark grayish brown (10YR 4/2) moist; moderate medium platy structure; soft, very friable, nonsticky and nonplastic; strongly alkaline (pH 8.5); clear wavy boundary.
C—2 to 9 inches; light gray (2.5Y 7/2) silty clay loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, moderately sticky, moderately plastic; violently effervescent; very strongly alkaline (pH 9.4); gradual wavy boundary.
Ckyz1—9 to 18 inches; light brownish gray (2.5Y 6/4) silty clay loam, dark grayish

brown (2.5Y 4/2) moist; massive; slightly hard, friable, moderately sticky, moderately plastic; common fine filaments, threads, seams, and concretions of calcium carbonate, gypsum, and sodium chloride crystals; violently effervescent; moderately alkaline (pH 8.3); gradual wavy boundary.

Ckyz2—18 to 29 inches; light brownish gray (2.5Y 6/4) silty clay loam, dark grayish brown (2.5Y 4/2) moist; weak thick platy structure; slightly hard, friable, slightly sticky, slightly plastic; common fine filaments, threads, seams, and concretions of calcium carbonate, gypsum, and sodium chloride crystals; violently effervescent; moderately alkaline (pH 8.3); clear wavy boundary.

Ckyz3—29 to 37 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; massive; hard, firm, moderately sticky, slightly plastic; common fine concretions, filaments, threads, and seams of calcium carbonate, gypsum, and sodium chloride crystals; violently effervescent; moderately alkaline (pH 8.3); gradual wavy boundary.

Ckyz4—37 to 60 inches; brown (10YR 5/3) silt loam, dark brown (10YR 4/3) moist; massive; hard, firm, moderately sticky, slightly plastic; few fine soft masses, filaments, threads, and concretions of calcium carbonate, gypsum, and sodium chloride crystals; violently effervescent; moderately alkaline (pH 8.3).

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 47 to 52 degrees F
Depth to restrictive feature: more than 60 inches
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 10YR to 5Y
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: silt loam or silty clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 0 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 16 mmhos/cm
Sodium adsorption ratio: 1 to 15
Reaction: pH 7.4 to 9.0

C horizon:
Hue: 10YR to 5Y
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: silt loam, silty clay loam, loam or clay loam (stratified in some pedons)
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent, mainly gravel
Calcium carbonate equivalent: 10 to 15 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 4 to 16 mmhos/cm
Sodium adsorption ratio: 5 to 10
Reaction: pH 7.4 to 9.4

Littlehat Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: plateaus
Parent material: slope alluvium and residuum derived from shale and siltstone
Elevation: 5,000 to 5,700 feet
Slope: 1 to 45 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-silty, mixed, semiactive, mesic Sodic Haplocambids

Typical Pedon

Littlehat silt loam, in an area of Littlehat-Persayo-Nataani complex, 1 to 15 percent slopes, from the adjoining Shiprock Soil Survey Area; USGS Sulphur Spring, New Mexico topographic quadrangle; 36 degrees 38 minutes 55 seconds north latitude and 108 degrees 42 minutes 57 seconds west longitude. NAD27 (colors are for dry soil unless otherwise noted).

Surface fragments: 25 percent channers.

Ay—0 to 2 inches; light yellowish brown (2.5Y 6/4) silt loam, light olive brown (2.5Y 5/4) moist; strong very thick platy structure; soft, very friable, slightly sticky, slightly plastic; few very fine roots; many very fine vesicular pores; secondary fine sand-sized gypsum crystals segregated in few fine irregularly shaped filaments and seams; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

By—2 to 10 inches; light yellowish brown (2.5Y 6/4) silt loam, light olive brown (2.5Y 5/4) moist; moderate coarse prismatic structure parting to weak coarse subangular blocky; slightly hard, friable, slightly sticky, slightly plastic; few fine and very fine roots; common very fine vesicular pores; secondary fine sand-sized gypsum crystals segregated in few fine irregularly shaped filaments; strongly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Czyn1—10 to 23 inches; grayish brown (2.5Y 5/2) silt loam, dark grayish brown (2.5Y 4/2) moist; weak fine subangular blocky structure; soft, very friable, moderately sticky, slightly plastic; few fine and common very fine roots; 5 percent parachanners; few lenses of coarse sand-sized primary gypsum crystals; strongly effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

Czyn2—23 to 31 inches; light brownish gray (2.5Y 6/2) parachannery silt loam, grayish brown (2.5Y 5/2) moist; massive; platy rock structure; soft, very friable, moderately sticky, slightly plastic; few fine and common very fine roots; 15 percent parachanners; few lenses of coarse sand-sized primary gypsum crystals; strongly effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Cr—31 inches; siltstone bedrock.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 57 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Surface fragments: 0 to 65 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 10 percent

Ay horizon:
Hue: 10YR to 2.5Y
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: silt loam
Clay content: 18 to 27 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 10 to 20 percent
Gypsum content: 1 to 10 percent
Electrical conductivity: 4 to 16 mmhos/cm
Sodium adsorption ratio: 13 to 30
Reaction: pH 7.9 to 9.0

By or Czyn horizons:
Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam, silt loam or silty clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 10 percent, lithic, 0 to 35 percent parachanners
Calcium carbonate equivalent: 10 to 20 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 8 to 35 mmhos/cm
Sodium adsorption ratio: 30 to 100
Reaction: pH 7.9 to 9.0

Littlewater Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: mountains
Parent material: colluvium and slope alluvium derived from diorite
Elevation: 7,500 to 9,500 feet
Slope: 25 to 90 percent

Climatic data:
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F
Frost-free period: 80 to 100 days

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Typic Paleustalfs

Typical Pedon

Littlewater very gravelly silt loam, in an area of Littlewater-Rubble land-Rock outcrop complex, 25 to 90 percent slopes; USGS Mariano Wash East topographic quadrangle, 37 degrees 14 minutes 41.05 seconds north latitude and 108 degrees 49 minutes 13.54 seconds west longitude. NAD83 (colors are for dry soil unless otherwise noted).

Surface fragments: 10 percent gravel, 30 percent cobbles, 1 percent stones.

Oe—0 to1 inch; moderately decomposed plant material; 1 percent stones, 10 percent cobbles, and 30 percent gravel; noneffervescent; abrupt smooth boundary.

A—1 inch to 7 inches; dark brown (10YR 3/3) very gravelly silt loam, very dark grayish brown (10YR 3/2) moist; moderate very fine granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine roots throughout; 30 percent gravel, 10 percent cobbles, and 1 percent stones; noneffervescent; neutral, (pH 7.2); clear smooth boundary.

AE—7 to 20 inches; dark yellowish brown (10YR 4/4) very gravelly loam, dark yellowish brown (10YR 3/4) moist; weak medium platy structure parting to moderate fine granular; slightly hard, very friable, slightly sticky, slightly plastic; common fine, common medium, and common very fine roots throughout; 25 percent gravel, 10 percent cobbles, and 1 percent stones; noneffervescent; neutral, (pH 7.0); clear smooth boundary.

E—20 to 31 inches; yellowish brown (10YR 5/4) very gravelly loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; and common very fine, common fine, common medium, common coarse roots throughout; few very fine dendritic tubular pores; 35 percent gravel, 15 percent cobbles, and 1 percent stones; noneffervescent; neutral, (pH 6.8); clear smooth boundary.

Bt1—31 to 51 inches; strong brown (7.5YR 5/6) very gravelly loam, strong brown (7.5YR 4/6) moist; moderate medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine, common fine, common medium and common coarse roots throughout; common very fine dendritic tubular pores; 30 percent discontinuous distinct clay films on all faces of peds; 35 percent gravel, 15 percent cobbles, and 1 percent stones; noneffervescent; neutral, (pH 6.8); gradual smooth boundary.

Bt2—51 to 80 inches; strong brown (7.5YR 4/6) very gravelly loam, strong brown (7.5YR 4/6) moist; moderate medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine, common fine, common medium, common coarse roots throughout; common very fine dendritic tubular pores; 50 percent discontinuous distinct clay films on all faces of peds; 35 percent gravel, 15 percent cobbles, and 1 percent stones; noneffervescent; neutral, (pH 6.8).

Range in Characteristics

Soil moisture: udic ustic
Mean annual soil temperature: 44 to 47 degrees F
Surface fragments: 10 to 50 percent

Particle-size control section (weighted average):
Clay content: 10 to 20 percent
Rock fragment content: 35 to 80 percent, predominantly gravel and cobbles

A horizon:
Hue: 10YR
Value: 3 or 4 dry or moist
Chroma: 2 to 4
Texture, fine earth fraction: sandy loam or silt loam
Clay content: 10 to 15 percent
Fragments: 35 to 80 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.3

E horizon:
Hue: 10YR
Value: 4 to 6 dry or moist
Chroma: 3 to 5
Texture, fine earth fraction: sandy loam or loam
Clay content: 5 to 15 percent
Fragments: 35 to 80 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.3

Bt horizon:
Hue: 7.5YR to 10YR
Value: 4 or 5 dry or moist
Chroma: 4 to 6
Texture, fine earth fraction: sandy loam or loam
Clay content: 10 to 20 percent
Fragments: 35 to 80 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.3

Longburn Series

Depth class: very shallow to shallow
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: mesas
Parent material: eolian material and residuum derived from sandstone
Elevation: 6,800 to 7,800 feet
Slope: 3 to 80 percent

Climatic data:
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 130 to 150 days

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Lithic Haplustalfs

Typical Pedon

Longburn cobbly fine sandy loam, in an area of Arabrab-Longburn complex, 3 to 15 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Whites Mesa topographic quadrangle; 37 degrees 14 minutes 30 seconds north latitude and 108 degrees 23 minutes 28 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 2 percent channers, 15 percent flagstones.

A1—0 to 1 inch; brown (7.5YR 5/4) cobbly fine sandy loam, dark brown (7.5YR 3/3) moist; weak fine granular structure; soft, loose, nonsticky, nonplastic; 15 percent gravel, 10 percent cobbles, 5 percent stones, and 1 percent boulders; neutral (pH 7.2); abrupt smooth boundary.

A2—1 inch to 4 inches; brown (7.5YR 5/4) very cobbly fine sandy loam, dark brown (7.5YR 3/4) moist; weak fine granular structure; soft, very friable, nonsticky, nonplastic; common very fine and many medium roots throughout; 20 percent gravel, 15 percent cobbles, 5 percent stones, and 1 percent boulders; neutral (pH 7.2); clear wavy boundary.

Bt1—4 to 12 inches; brown (7.5YR 5/4) very cobbly clay loam, brown (7.5YR 4/4) moist; moderate medium angular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine and common medium roots throughout; common very fine continuous tubular pores; many distinct continuous clay films on faces of peds and in pores; 20 percent gravel, 20 percent cobbles, 5 percent stones, and 1 percent boulders; slightly alkaline (pH 7.4); clear wavy boundary.

Bt2—12 to 17 inches; brown (7.5YR 5/4) very cobbly clay loam, brown (7.5YR 4/4) moist; moderate medium angular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine roots throughout; common very fine discontinuous tubular pores; many distinct continuous clay films on faces of peds and in pores; 25 percent gravel, 20 percent cobbles, 5 percent stones, and 1 percent boulders; slightly alkaline (pH 7.4); abrupt wavy boundary.

R—17 inches; hard Cliffhouse sandstone.

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 49 to 52 degrees F
Depth to restrictive feature: 6 to 20 inches to bedrock (lithic)
Surface fragments: 10 to 40 percent

Particle-size control section (weighted average):
- *Clay content:* 20 to 35 percent
- *Rock fragment content:* 35 to 60 percent

A horizon:
- *Hue:* 7.5YR to 10YR
- *Value:* 4 or 5 dry; 3 or 4 moist
- *Chroma:* 3 or 4
- *Texture, fine earth fraction:* loam or fine sandy loam
- *Clay content:* 10 to 20 percent
- *Fragments:* 35 to 60 percent
- *Calcium carbonate equivalent:* 0 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* neutral or slightly alkaline pH 6.6 to 7.8

Bt horizon:
- *Hue:* 7.5YR
- *Value:* 4 or 5 dry; 3 or 4 moist
- *Chroma:* 4 or 5
- *Texture, fine earth fraction:* clay loam or sandy clay loam
- *Clay content:* 20 to 35 percent
- *Fragments:* 30 to 60 percent, predominantly gravel and cobble
- *Calcium carbonate equivalent:* 0 to 5 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* slightly or moderately alkaline pH 7.4 to 7.8

Mack Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: mesas, structural benches
Parent material: eolian material derived from sandstone
Elevation: 4,800 to 5,700 feet
Slope: 0 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-loamy, mixed, superactive, mesic Typic Calciargids

Typical Pedon

Mack fine sandy loam, 3 to 6 percent slopes; USGS Mariano Wash West topographic quadrangle; 37 degrees 13 minutes 4.18 seconds north latitude and 108 degrees 58 minutes 20.45 seconds west longitude. NAD83 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A1—0 to 4 inches; reddish brown (5YR 5/3) fine sandy loam, reddish brown (5YR 4/3) moist; moderate coarse platy structure, and moderate fine granular structure; loose, loose, nonsticky, nonplastic; common very fine roots throughout; common fine dendritic tubular pores; noneffervescent; slightly alkaline (pH 7.8); abrupt smooth boundary.

A2—4 to 14 inches; reddish brown (5YR 5/4) fine sandy loam, reddish brown (5YR 4/3) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky, nonplastic; common very fine roots between peds; fine dendritic tubular and medium dendritic tubular pores; noneffervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Btk1—14 to 27 inches; light reddish brown (5YR 6/4) loam, reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure; hard, very firm, slightly sticky, slightly plastic; common very fine roots between peds; common very fine dendritic tubular pores; 20 percent distinct clay bridging on lower faces of peds; 15 percent fine irregular carbonate masses on faces of peds; strongly effervescent; moderately alkaline (pH 8.4); clear irregular boundary.

Btk2—27 to 43 inches; pink (5YR 8/3) loam, light reddish brown (5YR 6/3) moist; moderate medium subangular blocky structure; very hard, very firm, slightly sticky, slightly plastic; few very fine roots throughout; common very fine tubular pores; 40 percent distinct clay bridging on lower faces of peds; 50 percent fine irregular carbonate masses on faces of peds; violently effervescent; moderately alkaline (pH 8.4); clear irregular boundary.

C—43 to 56 inches; light reddish brown (5YR 6/4) fine sandy loam, reddish brown (5YR 5/4) moist; massive; soft, friable, nonsticky, nonplastic; few very fine roots throughout; 1 percent fine dendritic carbonate masses on faces of peds; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Btnb—56 to 64 inches; reddish brown (5YR 5/4) sandy clay loam, and reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure; very hard, very firm, slightly sticky, slightly plastic; few very fine roots throughout; 5 percent medium dendritic carbonate masses infused into matrix along ped faces; strongly effervescent; very strongly alkaline (pH 9.2); abrupt smooth boundary.

Bkb—64 to 80 inches; pink (5YR 8/3) sandy clay loam, pink (5YR 7/4) moist; massive; very hard, very firm, slightly sticky, slightly plastic; 5 percent coarse dendritic carbonate masses throughout; violently effervescent; strongly alkaline (pH 8.8).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to calcic horizon: 10 to 30 percent
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 5YR to 7.5YR
Value: 4 to 7 dry; 3 to 5 moist
Chroma: 2 to 6
Texture, fine earth fraction: fine sandy loam
Clay content: 5 to 20 percent
Fragments: unspecified
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.4 to 8.4

Btk horizon:
Hue: 5YR to 10YR
Value: 5 to 8 dry; 4 to 6 moist
Chroma: 3 to 6
Texture, fine earth fraction: loam, clay loam or sandy clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 15 to 40 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 15
Reaction: pH 7.4 to 9.0

Mariano Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: fan remnants
Parent material: eolian material derived from sandstone over alluvium derived from diorite (fig. 12)
Elevation: 4,800 to 5,700 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Figure 12.—Typical profile of Mariano very fine sandy loam, 3 to 6 percent slopes. A surface of eolian material overlies alluvial deposits of igneous material from the Sleeping Ute Mountains on fan remnants. A calcic horizon begins at 13 inches.

Taxonomic class: Loamy-skeletal, carbonatic, mesic Typic Haplocalcids

Typical Pedon

Mariano very fine sandy loam, 1 to 3 percent slopes; USGS Mariano Wash West topographic quadrangle; 37 degrees 12 minutes 18.3 seconds north latitude and 108 degrees 58 minutes 30.0 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 5 percent gravel.

A1—0 to 3 inches; brown (7.5YR 5/4) very fine sandy loam, brown (7.5YR 4/3) moist; weak, coarse platy structure; soft, very friable, nonsticky and nonplastic; common fine roots throughout; strongly effervescent; 5 percent gravel; moderately alkaline (pH 8.0); clear smooth boundary.

A2—3 to 11 inches; light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 5/4) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; many fine roots throughout; common fine discontinuous tubular pores; strongly effervescent; 10 percent gravel; moderately alkaline (pH 8.2); gradual wavy boundary.

2Bk1—11 to 19 inches; pink (7.5YR 7/3) extremely gravelly coarse sandy loam, light brown (7.5YR 6/4) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common fine roots throughout; common fine discontinuous tubular pores; many soft masses of carbonate throughout; violently effervescent; 80 percent gravel, 2 percent cobbles, and 1 percent stones; moderately alkaline (pH 8.4); clear wavy boundary.

2Bk2—19 to 29 inches; white (7.5YR 8/1) extremely gravelly fine sandy loam, light gray (7.5YR 7/1) moist; massive; very hard, very firm, nonsticky and nonplastic;

few fine roots matted around stones; many hard masses of carbonate throughout; violently effervescent; 80 percent gravel, 5 percent cobbles, and 1 percent stones; moderately alkaline (pH 8.4); gradual wavy boundary.

2Bkn—29 to 51 inches; white (7.5YR 8/1) extremely gravelly sandy loam, light gray (7.5YR 7/1) moist; massive; hard, very firm, nonsticky and nonplastic; few fine roots matted around stones; many hard masses of carbonate throughout; violently effervescent, 1 percent gypsum; SAR 16; 45 percent gravel, 20 percent cobbles, and 5 percent stones; moderately alkaline (pH 8.4); clear wavy boundary.

2Bkny1—51 to 62 inches; light brown (7.5YR 6/3) extremely gravelly sandy loam, brown (7.5YR 5/3) moist; massive; loose, loose, nonsticky and nonplastic; few fine roots matted around stones; many hard masses of carbonate throughout; moderately effervescent; 55 percent gravel, 20 percent cobbles, and 5 percent stones; moderately alkaline (pH 8.2); gradual wavy boundary.

2Bkny2—62 to 84 inches; brown (10YR 5/3) extremely cobbly sandy loam, brown (10YR 4/3) moist; massive; loose, loose, nonsticky and nonplastic; few soft masses of gypsum under rocks; strongly effervescent; 35 percent gravel, 20 percent cobbles, and 5 percent stones; moderately alkaline (pH 8.4); gradual wavy boundary.

2Bkn—84 to 108 inches; brown (10YR 5/3) extremely cobbly loamy sand, brown (10YR 4/3) moist; massive; loose, loose, nonsticky and nonplastic; strongly effervescent; 35 percent gravel, 20 percent cobbles, and 5 percent stones; strongly alkaline (pH 8.6)

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to calcic horizon: 10 to 30 inches
Surface fragments: 0 to 15 percent, mainly gravel

Particle-size control section (weighted average):
Clay content: 10 to 18 percent
Rock fragment content: 35 to 80 percent, mainly igneous gravel and cobble

A horizon:
Hue: 7.5YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 to 5
Texture, fine earth fraction: very fine sandy loam
Clay content: 10 to 20 percent
Fragments: 0 to 15 percent, mainly igneous gravel
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

2Bk1 horizon:
Hue: 7.5YR
Value: 6 or 7 dry; 5 or 6 moist
Chroma: 3 to 5
Texture, fine earth fraction: loam, sandy loam, fine sandy loam or coarse sandy loam
Clay content: 10 to 18 percent
Fragments: 15 to 85 percent, mainly igneous gravel
Calcium carbonate equivalent: 15 to 45 percent

Gypsum content: 0 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

2Bk2 horizon:
Hue: 7.5YR
Value: 7 or 8 dry or moist
Chroma: 1 or 2
Texture, fine earth fraction: sandy loam or loam
Clay content: 10 to 18 percent
Fragments: 35 to 90 percent, mainly igneous gravel and cobble
Calcium carbonate equivalent: 30 to 75 percent
Gypsum content: 0 to 2 percent
Electrical conductivity: 2 to 16 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: moderately alkaline pH 7.9 to 8.4

2Bkn or 2Bkny horizon:
Hue: 7.5YR or 10YR
Value: 5 or 6 dry or moist
Chroma: 3 or 4
Texture, fine earth fraction: sandy loam or loam
Clay content: 10 to 18 percent
Fragments: 35 to 80 percent
Calcium carbonate equivalent: 15 to 35 percent
Gypsum content: 1 to 10 percent
Electrical conductivity: 8 to 16 mmhos/cm
Sodium adsorption ratio: 1 to 25
Reaction: moderately alkaline pH 7.9 to 8.4

Mikett Series

Depth class: very deep
Drainage class: somewhat poorly
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: alluvial fans, drainageways
Parent material: alluvium derived from sandstone and shale
Elevation: 5,400 to 6,200 feet
Slope: 0 to 3 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Fine-loamy, mixed, superactive, calcareous, mesic Oxyaquic Torriorthents

Typical Pedon

Mikett clay loam, saline-sodic, 0 to 3 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Mud Creek topographic quadrangle; 37 degrees 17 minutes 48 seconds north latitude and 108 degrees 37 minutes 48 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

Ap1—0 to 2 inches; light brownish gray (2.5Y 6/2) clay loam, dark grayish brown (2.5Y 4/2) moist; moderate coarse platy structure parting to moderate medium granular; soft, very friable, moderately sticky, slightly plastic; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.
Ap2—2 to 8 inches; light brownish gray (2.5Y 6/2) clay loam, dark grayish brown (2.5Y 4/2) moist; weak coarse subangular blocky structure; slightly hard, friable, moderately sticky, slightly plastic; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.
C1—8 to 15 inches; light brownish gray (2.5Y 6/2) clay loam, dark grayish brown (2.5Y 4/2) moist; weak coarse prismatic structure parting to weak coarse subangular blocky; hard, firm, moderately sticky, slightly plastic; violently effervescent; very strongly alkaline (pH 9.6); clear wavy boundary.
C2—15 to 22 inches; light brownish gray (2.5Y 6/2) clay loam, dark grayish brown (2.5Y 4/2) moist; weak coarse subangular blocky structure; very hard, firm, moderately sticky, slightly plastic; violently effervescent; very strongly alkaline (pH 9.6); clear smooth boundary.
C3—22 to 35 inches; light brownish gray (2.5Y 6/2) clay loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, moderately sticky, slightly plastic; violently effervescent; very strongly alkaline (pH 9.6); gradual wavy boundary.
C4—35 to 60 inches; light brownish gray (2.5Y 6/2) clay loam, dark grayish brown (2.5Y 4/2) moist; massive; slightly hard, friable, moderately sticky, slightly plastic; violently effervescent; very strongly alkaline (pH 9.6).

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Surface fragments: 0 to 5 percent
Seasonal high water table: April to August, 12 to 36 inches

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 10YR to 2.5Y
Value: 4 to 7 dry; 3 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam
Clay content: 27 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 4 to 8 mmhos/cm
Sodium adsorption ratio: 5 to 15
Reaction: pH 7.9 to 9.0

C horizon:
Hue: 7.5YR to 2.5Y
Value: 4 to 7 dry; 3 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam or loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 8 to 16 mmhos/cm

Sodium adsorption ratio: 15 to 20
Reaction: pH 8.5 to 9.6

Mikim Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: alluvial fans
Parent material: alluvium derived from sandstone and shale
Elevation: 5,400 to 6,200 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents

Typical Pedon

Mikim loam, 3 to 6 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Towaoc topographic quadrangle; 37 degrees 15 minutes 42 seconds north latitude and 108 degrees 39 minutes 8 west longitude. NAD 27 (colors for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 3 inches; brown (10YR 4/3) loam, dark brown (10YR 3/3) moist; strong medium platy structure; soft, very friable, slightly sticky, nonplastic; violently effervescent; slightly alkaline (pH 7.6); clear wavy boundary.
AC—3 to 9 inches; brown (10YR 4/3) clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, moderately plastic; violently effervescent; slightly alkaline (pH 7.6); clear wavy boundary.
C1—9 to 15 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; weak coarse prismatic structure parting to weak coarse subangular blocky; very hard, firm, slightly sticky, moderately plastic; violently effervescent; slightly alkaline (pH 7.6); clear smooth boundary.
C2—15 to 19 inches; brown (10YR 5/3) sandy clay loam, brown (10YR 4/3) moist; weak coarse prismatic structure parting to weak coarse subangular blocky; hard, friable, slightly sticky, slightly plastic; violently effervescent; slightly alkaline (pH 7.6); clear smooth boundary.
C3—19 to 32 inches; brown (10YR 5/3) stratified fine sandy loam to clay loam, brown (10YR 4/3) moist; weak coarse prismatic structure parting to weak coarse subangular blocky; hard, firm, slightly sticky, slightly plastic; violently effervescent; slightly alkaline (pH 7.8); gradual wavy boundary.
C4—32 to 60 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; weak coarse prismatic structure parting to weak coarse subangular blocky; hard, firm, moderately sticky, moderately plastic; common fine irregular carbonate threads; violently effervescent; moderately alkaline (pH 8.0).

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F

Depth to restrictive feature: more than 60 inches
Depth to secondary carbonates: 0 to 10 inches
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 15 percent

A or AC horizon:
Hue: 10YR to 2.5Y
Value: 4 to 7 dry; 3 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam or loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

C horizon:
Hue: 7.5YR to 2.5Y
Value: 5 to 7 dry; 3 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: stratified fine sandy loam to clay loam
Clay content: 10 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Monierco Series

Depth class: shallow
Drainage class: well
Slowest permeability: 0.001 to 0.06 in/hr (very slow)
Landform: cuesta valleys
Parent material: residuum derived from shale and sandstone
Elevation: 4,800 to 5,700 feet
Slope: 3 to 12 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Loamy, mixed, superactive, mesic, shallow Typic Haplargids

Typical Pedon

Monierco fine sandy loam, 3 to 12 percent slopes; USGS Purgatory Canyon topographic quadrangle; 36 degrees 53 minutes 50.5 seconds north latitude and 108 degrees 16 minutes 55.6 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 30 percent gravel.

A1—0 to 2 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; weak medium platy structure, and moderate fine granular structure; soft, loose, nonsticky, nonplastic; common fine and common medium roots throughout; common very fine and common medium dendritic tubular pores; 10 percent gravel; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

A2—2 to 7 inches; light brownish gray (10YR 6/2) loam, brown (10YR 5/3) moist; weak fine subangular blocky structure; moderately hard, very friable, nonsticky, nonplastic; common fine and common medium roots throughout; common very fine tubular pores; 10 percent gravel; violently effervescent; moderately alkaline (pH 8.4); gradual smooth boundary.

Btk—7 to 18 inches; pale brown (10YR 6/3) gravelly loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; hard, friable, nonsticky, nonplastic; common very fine roots throughout; common very fine tubular pores; 5 percent fine irregular carbonate masses around rock fragments; 15 percent distinct clay films on faces of peds; 15 percent gravel; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Cr—18 inches; Lewis shale.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Surface fragments: 0 to 50 percent

Particle-size control section (weighted average):
- *Clay content:* 18 to 35 percent
- *Rock fragment content:* 0 to 15 percent

A horizon:
- *Hue:* 10YR
- *Value:* 5 or 6 dry; 4 or 5 moist
- *Chroma:* 2 to 4
- *Texture, fine earth fraction:* fine sandy loam or loam
- *Clay content:* 8 to 19 percent
- *Fragments:* 0 to 25 percent
- *Calcium carbonate equivalent:* 1 to 5 percent
- *Gypsum content:* 1 to 5 percent
- *Electrical conductivity:* 0 to 2 mmhos/cm
- *Sodium adsorption ratio:* 1 to 5
- *Reaction:* pH 7.9 to 8.4

Btk horizon:
- *Hue:* 10YR
- *Value:* 4 to 6 dry; 4 or 5 moist
- *Chroma:* 2 to 4
- *Texture, fine earth fraction:* sandy loam or loam
- *Clay content:* 12 to 25 percent
- *Fragments:* 0 to 40 percent
- *Calcium carbonate equivalent:* 5 to 15 percent
- *Gypsum content:* 2 to 5 percent
- *Electrical conductivity:* 0 to 4 mmhos/cm
- *Sodium adsorption ratio:* 1 to 10
- *Reaction:* pH 7.9 to 9.0

Morefield Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: mesas
Parent material: eolian material derived from sandstone
Elevation: 6,800 to 7,800 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 130 to 150 days

Taxonomic class: Fine-silty, mixed, superactive, mesic Aridic Paleustalfs

Typical Pedon

Morefield loam, 1 to 3 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Moccasin Mesa topographic quadrangle; 37 degrees 9 minutes 31 seconds north latitude and 108 degrees 28 minutes 53 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 2 inches; brown (7.5YR 4/3) loam, dark brown (7.5YR 3/3), moist; single grain; loose nonsticky, nonplastic; common very fine roots throughout; noneffervescent; slightly alkaline (pH 7.6); abrupt smooth boundary.

Bt1—2 to 8 inches; reddish brown (5YR 5/4) clay loam, reddish brown (5YR 4/4), moist; moderate fine angular blocky structure; hard, friable, slightly sticky, slightly plastic; common fine and medium roots throughout; common very fine discontinuous tubular pores; faint discontinuous clay bridging between sand grains; noneffervescent; neutral (pH 6.8); abrupt smooth boundary.

Bt2—8 to 12 inches; reddish brown (5YR 5/4) clay loam, reddish brown (5YR 4/4), moist; moderate medium angular blocky structure; very hard, firm, slightly sticky, slightly plastic; common fine, medium, and coarse roots throughout; common very fine discontinuous tubular pores; faint discontinuous clay bridging between sand grains; noneffervescent; neutral (pH 7.0); clear smooth boundary.

Bt3—12 to 24 inches; reddish brown (5YR 5/4) clay loam, reddish brown (5YR 4/4), moist; moderate medium angular blocky structure; very hard, firm, slightly sticky, slightly plastic; common fine, medium, and coarse roots throughout; few very fine discontinuous tubular pores; faint discontinuous clay bridging between sand grains; slightly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

Btk1—24 to 58 inches; reddish brown (5YR 5/4) clay loam, reddish brown (5YR 4/4), moist; moderate medium angular blocky structure; very hard, firm, slightly sticky, slightly plastic; common medium roots throughout; few very fine discontinuous tubular pores; many faint continuous clay films on faces of peds and in pores; common fine irregular carbonate threads; slightly effervescent; slightly alkaline; (pH 7.8) clear smooth boundary.

Btk2—58 to 60 inches; yellowish red (5YR 5/4) clay loam, reddish brown (5YR 4/4), moist; strong medium prismatic structure parting to strong medium angular blocky; very hard, firm, slightly sticky, moderately plastic; few fine roots throughout; few very fine discontinuous tubular pores; many faint continuous clay films on faces of peds and in pores; few fine irregular carbonate threads; slightly effervescent; slightly alkaline (pH 7.7); abrupt smooth boundary.

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 46 to 51 degrees F
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
- *Clay content:* 18 to 35 percent
- *Rock fragment content:* 0 to 10 percent

A horizon:
- *Hue:* 5YR to 7.5YR
- *Value:* 4 to 5 dry; 3 or 4 moist
- *Chroma:* 2 to 4
- *Texture, fine earth fraction:* loam
- *Clay content:* 10 to 20 percent
- *Fragments:* 0 to 5 percent
- *Calcium carbonate equivalent:* 0 to 1 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 6.6 to 7.8

Bt horizon:
- *Hue:* 5YR to 7.5YR
- *Value:* 4 or 5 dry; 3 to 6 moist
- *Chroma:* 3 to 6
- *Texture, fine earth fraction:* loam or clay loam
- *Clay content:* 18 to 35 percent
- *Fragments:* 0 to 10 percent
- *Calcium carbonate equivalent:* 0 to 1 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 6.6 to 7.8

Btk horizon:
- *Hue:* 5YR to 7.5YR
- *Value:* 4 or 5 dry; 3 to 6 moist
- *Chroma:* 3 to 6
- *Texture, fine earth fraction:* loam or clay loam
- *Clay content:* 18 to 35 percent
- *Fragments:* 0 to 10 percent
- *Calcium carbonate equivalent:* 5 to 15 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 7.4 to 7.8

Nataani Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: plateaus, structural benches

Parent material: slope alluvium and residuum derived from sandstone and siltstone
Elevation: 4,800 to 5,700 feet
Slope: 1 to 9 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Coarse-silty, mixed, semiactive, mesic Typic Haplogypsids

Typical Pedon

Nataani very fine sandy loam; in an area of Littlehat-Persayo-Nataani complex, 0 to 15 percent slopes, from the adjoining Shiprock Soil Survey Area; USGS Sulphur Spring, New Mexico topographic quadrangle; 36 degrees 42 minutes 14 seconds north latitude and 108 degrees 40 minutes 23 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 1 percent gravel.

A—0 to 3 inches; light yellowish brown (10YR 6/4) very fine sandy loam, yellowish brown (10YR 5/4) moist; moderate thick platy structure parting to weak very fine granular; soft, very friable, slightly sticky, nonplastic; few fine and very fine roots; common very fine vesicular pores; 2 percent fine gravel; violently effervescent; mildly alkaline (pH 7.8); clear smooth boundary.

2Bw—3 to 9 inches; light yellowish brown (2.5Y 6/4) loam, light olive brown (2.5Y 5/4) moist; moderate coarse subangular blocky structure; soft, very friable; slightly sticky, slightly plastic; few fine and common very fine roots; common very fine continuous tubular pores; violently effervescent; secondary calcium carbonates segregated in few fine irregularly shaped filaments; moderately alkaline (pH 8.1); abrupt smooth boundary.

2By1—9 to 15 inches; light gray (2.5Y 7/2) gypsiferous material which is an apparent silt loam, light yellowish brown (2.5Y 6/4) moist; moderate coarse subangular blocky structure; slightly hard, friable, slightly sticky, nonplastic; few fine and very fine roots; few very fine continuous tubular pores; secondary silt-sized gypsum crystals segregated in many fine irregularly shaped filaments, few coarse sand-sized primary gypsum crystals; strongly effervescent; mildly alkaline (pH 7.8); clear wavy boundary.

2By2—15 to 21 inches; light yellowish brown (2.5Y 6/4) gypsiferous material which is an apparent silt loam, light olive brown (2.5Y 5/4) moist; weak coarse subangular blocky structure; soft, very friable, slightly sticky, nonplastic; few fine and common very fine roots; few very fine discontinuous tubular pores; secondary silt-sized gypsum crystals segregated in common fine irregularly shaped filaments, few coarse sand-sized gypsum crystals; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

2Cy—21 to 30 inches; light yellowish brown (2.5Y 6/4) silt loam, light olive brown (2.5Y 5/4) moist; massive, platy rock structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and common very fine roots; few very fine discontinuous irregularly shaped pores; 5 percent siltstone parachanners; secondary silt-sized gypsum crystals segregated as few fine irregularly shaped filaments on undersides of fragments, few coarse sand-sized primary gypsum crystals in soft masses; slightly effervescent; moderately alkaline (pH 8.1); clear wavy boundary.

2Cr—30 inches; thinly interbedded siltstone and very fine grained soft sandstone bedrock.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Depth to gypsic horizon: 6 to 15 inches
Surface fragments: unspecified

Particle-size control section (weighted average):
Clay content: 10 to 18 percent
Rock fragment content: 0 to 5 percent by volume, dominantly pebbles

A horizon:
Hue: 7.5YR
Value: 4 to 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: fine sandy loam
Clay content: 5 to 15 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 2 to 10 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

Bw horizon:
Hue: 10YR to 2.5Y
Value: 6 dry; 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam, sandy loam or very fine sandy loam
Clay content: 10 to 20 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

By horizon:
Hue: 10YR to 2.5Y
Value: 6 or 7 dry; 5 or 7 moist
Chroma: 2 to 4
Texture, fine earth fraction: gypsiferous silt loam or gypsiferous very fine sandy loam
Clay content: 5 to 20 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 15 to 45 percent
Electrical conductivity: 2 to 16 mmhos/cm
Sodium adsorption ratio: 0 to 13
Reaction: pH 7.4 to 8.4

Nees Series

Depth class: very shallow or shallow

Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: mountains
Parent material: residuum derived from diorite
Elevation: 6,200 to 8,800 feet
Slope: 35 to 90 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Lithic Haplustalfs

Typical Pedon

Nees very cobbly loam, in an area of Wetoe-Nees-Rock outcrop complex, 35 to 90 percent slopes; USGS Mariano Wash East topographic quadrangle; 37 degrees 14 minutes 32.7 seconds north latitude and 108 degrees 49 minutes 42.3 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 20 percent gravel, 20 percent cobbles, 5 percent stones.

A1—0 to 1 inch; brown (7.5YR 5/3) very cobbly loam, dark brown (7.5YR 3/3) moist; moderate fine granular structure; soft, friable, slightly sticky, slightly plastic; common medium and many very fine roots throughout; 20 percent gravel, 20 percent cobbles, and 5 percent stones; neutral, (pH 6.8); clear smooth boundary.
A2—1 inch to 3 inches; brown (7.5YR 5/4) extremely cobbly loam, brown (7.5YR 4/4) moist; moderate fine granular structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and common medium roots throughout; 40 percent gravel, 30 percent cobbles, and 5 percent stones; neutral, (pH 6.8); clear irregular boundary.
Bt—3 to 11 inches; strong brown (7.5YR 4/6) extremely cobbly loam, brown (7.5YR 4/4) moist; moderate fine subangular blocky structure; moderately hard, firm, slightly sticky, slightly plastic; common fine and common medium roots throughout; common very fine dendritic tubular pores; 40 percent faint clay films on faces of peds; 40 percent gravel, 40 percent cobbles, and 5 percent stones; slightly acid, (pH 6.6); abrupt irregular boundary.
R—11 inches; hard fractured diorite bedrock.

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 48 to 52 degrees F
Depth to restrictive feature: 6 to 20 inches to bedrock (lithic)
Depth to lithic contact: 6 to 20 inches
Surface fragments: 15 to 60 percent

Particle-size control section (weighted average):
Clay content: 18 to 27 percent
Rock fragment content: 35 to 90 percent, dominantly gravel

A horizon:
Hue: 7.5YR to 10YR
Value: 4 or 5 dry; 3 or 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam
Clay content: 10 to 20 percent
Fragments: 35 to 90 percent

Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.3

Bt horizon:
Hue: 7.5YR to 10YR
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 4 to 6
Texture, fine earth fraction: loam or sandy clay loam
Clay content: 15 to 27 percent
Fragments: 35 to 90 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.3

Nomad Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: structural benches
Parent material: eolian material over residuum derived from limestone
Elevation: 4,800 to 5,700 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-loamy, carbonatic, mesic Typic Haplocalcids

Typical Pedon

Nomad loamy sand, in an area of Greycap-Nomad complex, 1 to 6 percent slopes; USGS Sentinel Peak Southwest topographic quadrangle; 37 degrees 1 minute 8.17 seconds north latitude and 108 degrees 58 minutes 15.61 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 20 percent gravel.

A—0 to 2 inches; light brown (7.5YR 6/4) loamy sand, brown (7.5YR 5/4) moist; moderate medium platy structure parting to moderate very fine granular; soft, very friable, nonsticky and nonplastic; common very fine roots throughout; common very fine vesicular pores; 5 percent sandstone gravel; violently effervescent; moderately alkaline (pH 8.0); clear wavy boundary.
Bw1—2 to 7 inches; light brown (7.5YR 6/4) loam, brown (7.5YR 5/4) moist; weak medium subangular blocky structure parting to moderate very fine granular; slightly hard, friable, nonsticky and nonplastic; common very fine roots throughout; common very fine dendritic tubular pores; 1 percent sandstone gravel; violently effervescent; moderately alkaline (pH 8.0); gradual wavy boundary.
Bw2—7 to 14 inches; light brown (7.5YR 6/4) loam, brown (7.5YR 5/4) moist; weak

medium subangular blocky structure; slightly hard, friable, slightly sticky and nonplastic; many very fine roots throughout; common very fine and few fine dendritic tubular pores; 1 percent sandstone gravel; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

2Bk—14 to 21 inches; very pale brown (10YR 7/3) clay loam, pale brown (10YR 6/3) moist; moderate medium subangular blocky structure; very hard, extremely firm, moderately sticky and moderately plastic; common very fine roots throughout; common very fine dendritic tubular pores; common medium irregular masses of carbonate and finely disseminated carbonates throughout; 1 percent limestone parachanners; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

2C—21 to 30 inches; light yellowish brown (2.5Y 6/3) clay, light olive brown (2.5Y 5/3) moist; massive; slightly hard, friable, moderately sticky and moderately plastic; common very fine roots throughout; many very fine dendritic tubular pores; disseminated carbonates throughout; 1 percent limestone parachanners; violently effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

2Cr1—30 to 39 inches; highly fractured soft Greenhorn limestone; clear wavy boundary.

2Cr2—39 to 55 inches; fractured soft Greenhorn limestone.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Depth to calcic horizon: 10 to 20 inches
Surface fragments: 5 to 35 percent

Particle-size control section (weighted average):
Clay content: 27 to 35 percent
Rock fragment content: 0 to 5 percent

A horizon:
Hue: 7.5YR to 10YR
Value: 6 dry; 4 or 5 moist
Chroma: 4
Texture, fine earth fraction: loamy sand, sandy loam, silt loam or loam
Clay content: 10 to 18 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 25 to 35 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.9 to 8.4

Bw horizon:
Hue: 7.5YR to 10YR
Value: 6 or 7 dry; 5 moist
Chroma: 4
Texture, fine earth fraction: loam
Clay content: 10 to 18 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 35 to 50 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.9 to 8.4

2Bk horizon:
Hue: 10YR to 2.5Y
Value: 6 or 7 dry; 5 or 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam, or clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent limestone parachanners
Calcium carbonate equivalent: 45 to 60 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.9 to 8.4

2C horizon:
Hue: 2.5Y
Value: 6 dry; 5 moist
Chroma: 3
Texture, fine earth fraction: clay
Clay content: 40 to 45 percent
Fragments: 0 to 15 percent limestone parachanners
Calcium carbonate equivalent: 45 to 60 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.9 to 8.4

Oagamati Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: pediments
Parent material: residuum derived from shale
Elevation: 4,800 to 5,700 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine, smectitic, mesic Vertic Natrigypsids

Typical Pedon

Oagamati silty clay loam, 1 to 6 percent slopes; USGS Sentinel Peak Southwest topographic quadrangle; 37 degrees 6 minutes 10 seconds north latitude and 108 degrees 59 minutes 18 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 1 percent gravel.

A—0 to1 inch; light yellowish brown (10YR 6/4) silty clay loam, yellowish brown (10YR 5/4) moist; moderate very fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine roots throughout; 1 percent gravel; violently effervescent; moderately alkaline (pH 8.2); abrupt wavy boundary.
BA—1 inch to 5 inches; yellowish brown (10YR 5/6) clay, yellowish brown (10YR 5/6)

moist; moderate thick platy structure parting to weak very fine granular; moderately hard, firm, very sticky and very plastic; common very fine and few fine roots throughout; common very fine dendritic tubular pores; few faint pressure faces on faces of peds; violently effervescent; strongly alkaline (pH 8.6); clear wavy boundary.

Btn—5 to 13 inches; light yellowish brown (10YR 6/4) clay, yellowish brown (10YR 5/4) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; hard, very firm, very sticky and very plastic; common very fine and few fine roots throughout; common very fine dendritic tubular pores; few distinct clay films on faces of peds; common very fine irregular gypsum crystals; violently effervescent; strongly alkaline (pH 8.6); gradual wavy boundary.

Btny—13 to 23 inches; light yellowish brown (10YR 6/4) clay, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; hard, very firm, very sticky and very plastic; few very fine roots throughout; few very fine dendritic tubular pores; few distinct clay films on faces of peds; common very fine irregular gypsum crystals; strongly effervescent; strongly alkaline (pH 9.0); gradual wavy boundary.

C—23 to 35 inches; light olive brown (2.5Y 5/4) very parachannery clay, light olive brown (2.5Y 5/4) moist; weak fine subangular blocky structure; soft, very friable, very sticky and very plastic; few very fine roots throughout; few very fine dendritic tubular pores; common very fine gypsum crystals in the form of horizontal bands; 50 percent parachanners; strongly effervescent; strongly alkaline (pH 8.8); gradual wavy boundary.

Cr—35 to 62 inches; soft Mancos shale with bands and seams of gypsum and salts more soluble than gypsum.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Depth to gypsic horizon: 10 to 20 inches
Depth to natric horizon: 5 to 10 inches
Depth to salt accumulation: 5 to more than 60 inches
Vertic features: ½- to ¾-inch-wide cracks from surface to a depth of 1 foot, 1 to 3 feet apart
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 50 to 60 percent
Rock fragment content: 0 to 5 percent

A horizon:
Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: silty clay loam
Clay content: 27 to 35 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 1 to 3 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Btn horizon:
Hue: 10YR to 2.5Y

Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay
Clay content: 40 to 55 percent
Fragments: 0 to 15 percent, mainly parachanners
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 1 to 3 percent
Electrical conductivity: 8 to 16 mmhos/cm
Sodium adsorption ratio: 13 to 40
Reaction: pH 8.5 to 9.0

Btny horizon:
Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay
Clay content: 40 to 60 percent
Fragments: 0 to 15 percent, mainly parachanners
Calcium carbonate equivalent: 10 to 20 percent
Gypsum content: 5 to 10 percent
Electrical conductivity: 8 to 16 mmhos/cm
Sodium adsorption ratio: 13 to 40
Reaction: pH 8.5 to 9.0

C horizon:
Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay
Clay content: 40 to 50 percent
Fragments: 35 to 50 percent, mainly parachanners
Calcium carbonate equivalent: 10 to 20 percent
Gypsum content: 2 to 5 percent
Electrical conductivity: 8 to 16 mmhos/cm
Sodium adsorption ratio: 13 to 40
Reaction: pH 8.5 to 9.0

Pagayvay Series

Depth class: very deep
Drainage class: excessively
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Landform: flood plains, flood-plain step
Parent material: alluvium derived from diorite
Elevation: 5,400 to 6,200 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Loamy-skeletal, mixed, active, mesic Ustifluventic Haplocambids

Typical Pedon

Pagayvay extremely gravelly coarse sandy loam, 1 to 6 percent slopes, USGS

Mariano Wash East topographic quadrangle, located about 37 degrees 10 minutes 29.3 seconds north latitude, 108 degrees 49 minutes 38.1 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 60 percent gravel, 10 percent cobbles, 10 percent stones, 5 percent boulders.

A1—0 to1 inch; yellowish brown (10YR 5/4) extremely gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; soft, very friable, nonsticky, nonplastic; 50 percent gravel, 20 percent cobbles, 10 percent stones, and 5 percent boulders; strongly effervescent; slightly alkaline, (pH 7.4); abrupt smooth boundary.

A2—1 inch to 3 inches; yellowish brown (10YR 5/4) extremely cobbly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine platy structure; soft, very friable, nonsticky, nonplastic; common fine and common medium roots throughout; 40 percent gravel, 30 percent cobbles,10 percent stones, and 5 percent boulders; strongly effervescent; slightly alkaline, (pH 7.4); gradual smooth boundary.

Bk1—3 to 15 inches; yellowish brown (10YR 5/4) extremely cobbly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; 8 percent clay; structureless single grain; loose, loose, nonsticky, nonplastic; common medium roots throughout; common very thin irregular carbonate masses on bottom of rock fragments; 40 percent gravel, 30 percent cobbles, 10 percent stones, and 5 percent boulders; strongly effervescent; slightly alkaline, (pH 7.4); gradual wavy boundary.

Bk2—15 to 60 inches; light yellowish brown (10YR 6/4) extremely cobbly coarse sandy loam, yellowish brown (10YR 5/4) moist; structureless single grain; loose, loose, nonsticky, nonplastic; common medium roots throughout; many thin irregular carbonate masses on bottom of rock fragments; 40 percent gravel, 30 percent cobbles, 10 percent stones, and 5 percent boulders; strongly effervescent; slightly alkaline, (pH 7.8).

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Surface fragments: 15 to 90 percent

Particle-size control section (weighted average):
Clay content: 5 to 10 percent
Rock fragment content: 35 to 90 percent

A horizon:
Hue: 7.5YR to 2.5Y
Value: 5 or 6 dry; 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: coarse sandy loam or sandy loam
Clay content: 5 to 15 percent
Fragments: 15 to 90 percent
Calcium carbonate equivalent: 0 to 3 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

Bk or C horizon:
Hue: 7.5YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 to 4

Texture, fine earth fraction: stratified coarse sandy loam, sandy loam or loamy sand
Clay content: 5 to 10 percent
Fragments: 35 to 90 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

Patel Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: cuestas, structural benches
Parent material: alluvium and residuum from shale and siltstone
Elevation: 4,800 to 5,700 feet
Slope: 5 to 25 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine, mixed, active, mesic Typic Natrigypsids

Typical Pedon

Patel very channery loam, in an area of Persayo-Cairn-Patel complex, 1 to 25 percent slopes, from the adjoining Shiprock Area Soil Survey; USGS Sallies Spring topographic quadrangle; 36 degrees 56 minutes 47 seconds north latitude and 108 degrees 53 minutes 7 seconds longitude west. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 25 percent sandstone channers.

E—0 to 1 inch; light brown (7.5YR 6/4) very channery loam, brown (7.5YR 4/4) moist; moderate very thick platy structure; soft, very friable, slightly sticky, slightly plastic; few very fine roots throughout; few fine and common very fine vesicular pores; 10 percent gravel and 30 percent channers; strongly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

2Btn—1 inch to 8 inches; brown (7.5YR 5/4) clay, brown (7.5YR 4/4) moist; moderate medium prismatic structure parting to strong fine angular blocky; hard, firm, moderately sticky, moderately plastic; few very fine roots throughout; many very fine irregular pores; common thin clay films on faces of peds and lining pores; 5 percent gravel and 5 percent channers; strongly effervescent; strongly alkaline (pH 8.7); clear smooth boundary.

3Btkn—8 to 14 inches; yellowish brown (10YR 5/4) silty clay loam, dark yellowish brown (10 YR 4/4) moist; strong medium prismatic structure; hard, firm, moderately sticky, moderately plastic; few fine and common very fine roots throughout; common very fine discontinuous tubular pores; few thin clay films on faces of peds and lining pores; 10 percent parachanners; very few fine irregular gypsum crystals on faces of peds; few fine irregular carbonates masses on faces of peds; strongly effervescent; strongly alkaline (pH 8.7); clear wavy boundary.

3Btkyn—14 to 24 inches; yellowish brown (10YR 5/4) with grayish brown (10YR 5/2) parachannery silty clay loam, dark yellowish brown (10YR 4/4) with dark grayish

brown (10YR 4/2) moist; moderate medium prismatic structure parting to moderate coarse angular blocky; hard, firm, moderately sticky, moderately plastic; few fine and common very fine roots throughout; common very fine discontinuous tubular pores; very few thin clay films on faces of peds and lining pores; 15 percent parachanners; few fine irregular gypsum crystals on faces of peds; few medium irregular carbonates masses on faces of peds; strongly effervescent; strongly alkaline (pH 8.7); clear wavy boundary.

3By—24 to 30 inches; very pale brown (10YR 7/4) and light gray (10YR 7/2) very parachannery silty clay loam, yellowish brown (10YR 5/4) and grayish brown (10YR 5/2) moist; moderate very thick platy structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and few very fine roots throughout; few very fine horizontal tubular pores; 40 percent parachanners; common fine irregular gypsum crystals on faces of peds and on parachanners; strongly effervescent; alkaline (pH 7.6); clear wavy boundary.

Cy—30 to 37 inches; light yellowish brown (10YR 6/4) and light brownish gray (10YR 6/2) extremely parachannery clay loam, yellowish brown (10YR 5/4) and grayish brown (10YR 5/2) moist; massive, platy rock structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots throughout; few very fine horizontal tubular pores; 60 percent parachanners; few fine irregular gypsum crystals on parachanners; strongly effervescent; slightly alkaline (pH 7.6); clear wavy boundary.

Cr—37 inches; thinly interbedded shale and limestone bedrock.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 57 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Depth to gypsic horizon: 10 to 25 inches
Surface fragments: 15 to 45 percent

Particle-size control section (weighted average):
Clay content: 35 to 45 percent
Rock fragment content: 0 to 10 percent dolomitic limestone

A or E horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry, 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam or silty clay loam
Clay content: 18 to 35 percent
Fragments: 15 to 55 percent
Calcium carbonate equivalent: 5 to 20 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Btn horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay, silty clay or silty clay loam
Clay content: 40 to 50 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 5 to 20 percent
Gypsum content: 0 to 1 percent

Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 13 to 30
Reaction: pH 8.5 to 9.0

Btkn or Btkyn horizon:
Hue: 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: silty clay loam, clay loam or clay
Clay content: 27 to 40 percent
Fragments: 0 to 5 percent channers, 0 to 25 percent parachanners
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 0 to 2 percent
Electrical conductivity: 8 to 16 mmhos/cm
Sodium adsorption ratio: 13 to 30
Reaction: pH 8.5 to 9.0

By horizon:
Hue: 10YR to 2.5Y
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 2 to 6
Texture, fine earth fraction: clay loam or silty clay loam
Clay content: 27 to 40 percent
Fragments: 0 to 5 percent channers, 0 to 60 percent parachanners
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 5 to 15 percent
Electrical conductivity: 8 to 16 mmhos/cm
Sodium adsorption ratio: 13 to 30
Reaction: pH 7.4 to 8.4

Persayo Series

Depth class: very shallow to shallow
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: cuestas, hills, paleoterraces, pediments, structural benches, plains
Parent material: slope alluvium and residuum derived from shale and siltstone
Elevation: 4,800 to 5,700 feet
Slope: 1 to 45 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Loamy, mixed, active, calcareous, mesic, shallow Typic Torriorthents

Typical Pedon

Persayo silty clay loam, 3 to 12 percent slopes; USGS Sentinel Peak Southeast topographic quadrangle; 37 degrees 7 minutes 0 seconds north latitude and 108 degrees 48 minutes 52 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 2 inches; pale brown (10YR 6/3) loam, light olive brown (2.5Y 5/3) moist;

weak fine granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine roots throughout; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

C1—2 to 6 inches; pale brown (10YR 6/3) very parachannery silty clay loam, light olive brown (2.5Y 5/3) moist; weak very fine subangular blocky structure; moderately hard, very friable, slightly sticky, moderately plastic; common very fine, common fine and common medium roots throughout; common very fine dendritic tubular pores; 2 percent fine irregular gypsum nests throughout; 50 percent parachanners; violently effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.

C2—6 to 11 inches; pale brown (10YR 6/3) very parachannery silty clay loam, light olive brown (2.5Y 5/3) moist; massive; soft, very friable, slightly sticky, moderately plastic; common very fine, common fine, common medium and common roots throughout; 50 percent parachanners; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Cr—11 inches; Mancos shale.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 5 percent

A horizon:
Hue: 10YR to 2.5Y
Value: 6 or 7 dry; 4 or 5 moist
Chroma: 2 or 4
Texture: silty clay loam, silt loam or loam
Clay content: 15 to 40 percent
Fragments: 0 to 10 percent gravel
Calcium carbonate equivalent: 3 to 30 percent
Gypsum content: 0 to 10 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

C horizon:
Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 or 4
Texture: silty clay loam, clay loam, loam or silt loam
Clay content: 20 to 35 percent
Fragments: 0 to 5 percent lithic gravel, 0 to 75 percent paralithic
Parafragments: 0 to 60 percent
Calcium carbonate equivalent: 3 to 30 percent
Gypsum content: 2 to 10 percent
Electrical conductivity: 2 to 16 mmhos/cm
Sodium adsorption ratio: 0 to 13
Reaction: pH 7.4 to 8.4

Picliff Series

Depth class: very shallow to shallow
Drainage class: well
Slowest permeability: 0.001 to 0.06 in/hr (very slow)
Landform: cuesta valleys
Parent material: residuum derived shale and siltstone
Elevation: 4,800 to 5,700 feet
Slope: 3 to 9 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Loamy, mixed, active, mesic, shallow Leptic Haplogypsids

Typical Pedon

Picliff silty clay loam, 3 to 9 percent slopes; USGS Purgatory Canyon topographic quadrangle; 36 degrees 52 minutes 31.68 seconds north latitude and 108 degrees 17 minutes 51.23 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 10 percent gravel.

A—0 to 2 inches; light olive brown (2.5Y 5/3) silty clay loam, olive brown (2.5Y 4/3) moist; moderate fine granular structure; soft, soft, slightly sticky, moderately plastic; few very fine roots throughout; common very fine dendritic tubular pores; 3 percent parachanners; strongly effervescent; moderately alkaline, (pH 8.0); clear smooth boundary.

Bky—2 to 6 inches; light olive brown (2.5Y 5/3) parachannery silty clay loam, olive brown (2.5Y 4/3) moist; weak medium subangular blocky structure; very friable, slightly hard, moderately sticky, moderately plastic; common very fine and common fine roots throughout; common very fine tubular pores; 5 percent fine irregular carbonate masses and 2 percent fine irregular gypsum masses; 20 percent parachanners; violently effervescent, moderately alkaline, (pH 8.1); clear smooth boundary.

By—6 to 15 inches; light olive brown (2.5Y 5/3) extremely parachannery gypsiferous clay loam, olive brown (2.5Y 4/3) moist; massive; firm, hard, very sticky, very plastic; 2 percent fine irregular gypsum masses, 65 percent parachanners; violently effervescent; moderately alkaline, (pH 8.0); gradual smooth boundary.

Cr—15 inches; interbedded Lewis siltstone and shale.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restricted feature: 7 to 20 inches to bedrock (paralithic)
Depth to gypsic horizon: 1 to 7 inches
Surface fragments: 0 to 25 percent

Particle-size control section (weighted average):
Clay content: 15 to 35 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture: silty clay loam, silt loam or loam
Clay content: 15 to 35 percent
Fragments: 0 to 15 percent parachanners
Calcium carbonate equivalent: 2 to 10 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 1 to 4 mmhos/cm
Sodium adsorption ratio: 1 to 5
Reaction: pH 7.9 to 9.0

Bky horizon:
Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: silty clay loam, silt loam or loam
Clay content: 8 to 35 percent
Fragments: 5 to 35 percent parachanners
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 1 to 4 mmhos/cm
Sodium adsorption ratio: 1 to 5
Reaction: pH 7.9 to 9.0

By horizon:
Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: silty clay loam, silt loam, clay loam, loam, gypsiferous silty clay loam, or gypsiferous loam
Clay content: 7 to 35 percent
Fragments: 25 to 75 percent parachanners
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 5 to 20 percent
Electrical conductivity: 2 to 6 mmhos/cm
Sodium adsorption ratio: 1 to 5
Reaction: pH 7.9 to 9.0

Pogo Series

Depth class: very deep
Drainage class: poorly
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: drainageways
Parent material: alluvium derived from sandstone and shale
Elevation: 6,200 to 7,400 feet
Slope: 0 to 2 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Fine-loamy, mixed, superactive, calcareous, mesic Typic Fluvaquents

Typical Pedon

Pogo loam, 0 to 2 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Dolores West topographic quadrangle; 37 degrees 25 minutes 42 seconds north latitude and 108 degrees 34 minutes 14 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

Ay—0 to 2 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; weak thick platy structure; hard, friable, nonsticky, nonplastic; few fine soft masses of gypsum; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Ckyg—2 to 10 inches; light brownish gray (10YR 6/2) silty clay loam, dark grayish brown (10YR 4/2) moist; common fine distinct yellowish red (5YR 4/6), moist, iron masses; massive; very hard, very firm, moderately sticky, moderately plastic; common fine soft masses and filaments of gypsum; few fine seams and filaments of calcium carbonate; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Cyg1—10 to 20 inches; light brownish gray (10YR 6/2) silty clay loam, dark grayish brown (10YR 4/2) moist; common medium distinct yellowish red (5YR 4/6), moist, iron masses; massive; very hard, very firm, moderately sticky, moderately plastic; common fine soft masses and filaments of gypsum; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Cyg2—20 to 28 inches; grayish brown (10YR 5/2) silty clay loam, very dark grayish brown (10YR 3/2) moist; many large distinct yellowish red (5YR 4/6), moist, iron masses; massive; hard, friable, slightly sticky, slightly plastic; few fine soft masses of gypsum; violently effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.

Cg1—28 to 36 inches; pale brown (10YR 6/3) very fine sandy loam, dark grayish brown (10YR 4/2) moist; few fine faint yellowish red (5YR 4/6), moist, iron masses; massive; hard, friable, slightly sticky, nonplastic; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Cg2—36 to 60 inches; brown (10YR 5/3) fine sandy loam, very dark grayish brown (10YR 3/2) moist; few fine faint yellowish red (5YR 4/6), moist, iron masses; massive; very hard, friable, slightly sticky, nonplastic; violently effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Soil moisture: aquic
Mean annual soil temperature: 48 to 52 degrees F
Depth to redox concentrations: 2 to 20 inches
Depth to redox depletions: 2 to 20 inches
Surface fragments: none
Seasonal high water table: March to September, 0 to 20 inches

Particle-size control section (weighted average):
Clay content: 27 to 35 inches percent
Rock fragment content: 0 to 15 inches percent

A horizon:
Hue: 10YR
Value: 4 to 7 dry; 3 to 5 moist

Chroma: 0 to 2
Texture, fine earth fraction: loam
Clay content: 15 to 27 percent
Fragments: 0 to 15 percent gravel
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 9.0

C horizon:
Hue: 10YR
Value: 5 to 7 dry; 3 to 5 moist
Chroma: 1 to 3
Texture, fine earth fraction: stratified with sand to clay
Clay content: 5 to 45 percent
Fragments: 0 to 15 percent gravel
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 9.0

Prater Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: canyons
Parent material: slope alluvium and colluvium derived from shale and sandstone
Elevation: 6,800 to 7,800 feet
Slope: 25 to 60 percent

Climatic data:
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Fine, mixed, superactive, mesic Aridic Haplustalfs

Typical Pedon

Prater loam, in an area of Prater-Dolcan complex, 25 to 60 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Point Lookout topographic quadrangle; 37 degrees 15 minutes 7 seconds north latitude and 108 degrees 24 minutes 45 seconds west longitude, NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 8 percent gravel, 3 percent cobbles, 2 percent stones.

A1—0 to 1 inch; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; massive; loose, loose, nonsticky, nonplastic; 5 percent gravel, 5 percent cobbles, and 1 percent stones; noneffervescent; neutral (7.0); abrupt smooth boundary.
A2—1 inch to 3 inches; brown (10YR 5/3) clay loam, dark brown (10YR 3/3) moist; moderate coarse platy structure parting to moderate fine granular; slightly hard, very friable, slightly sticky, slightly plastic; common very fine and fine roots

throughout; 5 percent gravel, 5 percent cobbles, and 1 percent stones; noneffervescent; neutral (7.0); abrupt smooth boundary.

Bt—3 to 9 inches; yellowish brown (10YR 5/4) clay loam, brown (10YR 4/3) moist; moderate fine angular blocky structure; hard, friable, moderately sticky, moderately plastic; common fine roots between peds and common medium roots throughout; few very fine discontinuous tubular pores; common distinct discontinuous clay films on faces of peds and in pores; 5 percent gravel, 5 percent cobbles, and 1 percent stones; noneffervescent; neutral (7.0); gradual smooth boundary.

Btk1—9 to 17 inches; yellowish brown (10YR 5/4) clay loam, brown (10YR 4/3) moist; few medium faint yellowish brown (10YR 5/6) masses of iron accumulation; moderate fine angular blocky structure; very hard, friable, moderately sticky, moderately plastic; common fine and coarse roots throughout; few very fine and fine discontinuous tubular pores; many distinct continuous clay films on faces of peds and in pores; few fine rounded soft masses of carbonate throughout; 5 percent gravel, 5 percent cobbles, and 1 percent stones; slightly effervescent; slightly alkaline (7.6); gradual smooth boundary.

Btk2—17 to 21 inches; light yellowish brown (10YR 6/4) clay loam, brown (10YR 4/3), moist; common medium faint yellowish brown (10YR 5/6) iron masses; moderate fine angular blocky structure; very hard, friable, moderately sticky, moderately plastic; few very fine and common fine roots throughout; few very fine and fine discontinuous tubular pores; many distinct continuous clay films on faces of peds and in pores; common medium rounded soft masses of carbonate throughout; 5 percent gravel, 5 percent cobbles, and 1 percent stones; strongly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Btk3—21 to 37 inches; very pale brown (10YR 7/3) clay loam, brown (10YR 5/3) moist; common fine faint yellowish brown (10YR 5/6) iron masses; moderate fine angular blocky structure; very hard, friable, moderately sticky, moderately plastic; few very fine and common fine roots throughout; few very fine discontinuous tubular pores; many distinct continuous clay films on faces of peds and in pores; common coarse irregular soft masses of carbonate throughout; 5 percent gravel, 4 percent cobbles, and 2 percent stones; strongly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Bk—37 to 60 inches; 50 percent light gray (10YR 7/2), 25 percent light yellowish brown (10YR 6/4), and 25 percent brown (10YR 5/3) clay, grayish brown (10YR 5/2), yellowish brown (10YR 5/4), and grayish brown (10YR 5/2) moist; few fine faint yellowish brown (10YR 5/6) iron masses; weak coarse subangular blocky structure; extremely hard, friable, slightly sticky, moderately plastic; common very fine, few fine, and common medium roots throughout; common coarse rounded soft masses of carbonate throughout; 5 percent gravel, 5 percent cobbles, and 4 percent stones; slightly effervescent; moderately alkaline (pH 8.2). Pressure faces present. Horizon has variegated colors. Pockets of eolian material at a depth of 42 inches.

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 40 to 44 degrees F
Depth to restrictive feature: more than 60 inches
Surface fragments: 0 to 15 percent

Particle-size control section (weighted average):
Clay content: 35 to 50 percent
Rock fragment content: percent

A horizon:
Hue: 7.5YR to 10YR
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam or loam
Clay content: 10 to 27 percent
Fragments: 0 to 20 percent gravel
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 7.3

Bt or Btk horizon:
Hue: 10YR to 2.5Y
Value: 4 to 7 dry; 3 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam or clay
Clay content: 27 to 45 percent
Fragments: 5 to 20 percent gravel
Calcium carbonate equivalent: 0 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 8.4

Pulpit Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: mesas
Parent material: eolian material derived from sandstone
Elevation: 6,200 to 7,400 feet
Slope: 3 to 12 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Fine-silty, mixed, superactive, mesic Aridic Haplustalfs

Typical Pedon

Pulpit silt loam, in an area of Gladel-Pulpit complex, 3 to 9 percent slopes; USGS Trail Canyon topographic quadrangle; 37 degrees 7 minutes 19.22 seconds north latitude and 108 degrees 21 minutes 7.29 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 2 percent gravel.

A1—0 to1 inch; brown (7.5YR 4/3) silt loam, dark brown (7.5YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine roots throughout; common fine tubular pores; noneffervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.
A2—1 inch to 3 inches; reddish brown (5YR 4/4) silt loam, dark reddish brown (5YR

3/4) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine and common fine roots throughout; common medium tubular and many very fine dendritic tubular pores; noneffervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Bt—3 to 10 inches; reddish brown (5YR 4/4) silt loam, reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common very fine and common fine roots throughout; common fine dendritic tubular pores; 20 percent distinct clay films on all faces of peds; slightly effervescent; moderately alkaline (pH 8.2); gradual wavy boundary.

Btk1—10 to 19 inches; reddish brown (5YR 5/4) silt loam, reddish brown (5YR 4/4) moist; moderate medium angular blocky structure; hard, very firm, moderately sticky, moderately plastic; common very fine and common fine roots throughout; common fine dendritic tubular pores; 60 percent distinct clay films on all faces of peds; 5 percent medium irregular carbonate masses infused into matrix along ped faces; strongly effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

Btk2—19 to 24 inches; reddish brown (5YR 5/4) silt loam, reddish brown (5YR 4/4) moist; moderate medium angular blocky structure; hard, very firm, moderately sticky, moderately plastic; common very fine and common fine roots throughout; common fine dendritic tubular pores; 40 percent distinct clay films on all faces of peds; 15 percent medium irregular carbonate masses infused into matrix along ped faces; 5 percent gravel and 1 percent cobble; strongly effervescent; strongly alkaline (pH 8.4); gradual wavy boundary.

2R—24 inches; sandstone.

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 48 to 52 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 10 percent

A horizon:
Hue: 7.5YR
Value: 4 to 7 dry; 3 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam or silt loam
Clay content: 10 to 27 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 0 to 1 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 8.4

Bt horizon:
Hue: 5YR
Value: 5 to 7 dry; 3 to 6 moist
Chroma: 3 to 6
Texture, fine earth fraction: loam, silt loam, clay loam or silty clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 0 to 5 percent

Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 8.4

Btk horizon:
Hue: 5YR to 7.5YR
Value: 5 to 8 dry; 4 to 7 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam, silt loam, clay loam or fine sandy loam
Clay content: 10 to 35 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Ramper Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: alluvial fans
Parent material: alluvium derived from sandstone and shale
Elevation: 6,200 to 7,400 feet
Slope: 0 to 3 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches)
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustifluvents

Typical Pedon

Ramper loam, 0 to 3 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Champange Springs topographic quadrangle, 37 degrees 42 minutes 01 seconds north latitude and 108 degrees 53 minutes 10 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 3 inches; dark yellowish brown (10YR 4/4) loam, very dark grayish brown (10YR 3/2) moist; moderate medium platy structure parting to moderate medium granular; very hard, firm, moderately sticky, moderately plastic; strongly effervescent; moderately alkaline (pH 8.3); clear smooth boundary.
C—3 to 18 inches; brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 3/4) moist; moderate medium platy structure; slightly hard, very friable, slightly sticky, slightly plastic; strongly effervescent; slightly alkaline (pH 7.4); clear smooth boundary.
Ck1—18 to 30 inches; brown (7.5YR 5/4) loam, dark brown (7.5YR 3/4) moist; moderate medium platy structure; slightly hard, friable, slightly sticky, slightly plastic; few fine soft filaments of calcium carbonate; strongly effervescent; slightly alkaline (pH 7.4); abrupt smooth boundary.
Ck2—30 to 38 inches; brown (7.5YR 5/4) clay loam, dark brown (7.5YR 3/4) moist;

weak medium platy structure; slightly hard, firm, moderately sticky, moderately plastic; few fine soft filaments of calcium carbonate; slightly effervescent; slightly alkaline (pH 7.4); abrupt smooth boundary.

Ab—38 to 60 inches; brown (7.5YR 4/4) loam, dark brown (7.5YR 3/2) moist; massive; hard, firm, slightly sticky, slightly plastic; slightly effervescent; slightly alkaline (pH 7.4).

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: more than 60 inches
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 10YR
Value: 4 or 5 dry; 3 or 4 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam or clay loam
Clay content: 15 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

C horizon:
Hue: 7.5YR to 10YR
Value: 4 to 6 dry; 3 or 4 moist
Chroma: 2 to 4
Texture, fine earth fraction: stratified sandy loam to clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 2 to 8 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Ravola Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: alluvial fans, drainageways, flood plains
Parent material: alluvium from shale and siltstone
Elevation: 4,800 to 5,700 feet
Slope: 0 to 3 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches

Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-silty, mixed, active, calcareous, mesic Typic Torrifluvents

Typical Pedon

Ravola silt loam, 1 to 3 percent slopes; USGS Towaoc topographic quadrangle; 37 degrees 8 minutes 13 seconds north latitude and 108 degrees 43 minutes 22 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: none

A—0 to 2 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; weak very fine granular structure; soft, very friable, slightly sticky, slightly plastic; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.
C—2 to 17 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; strong thick platy structure parting to moderate medium platy; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots throughout; common very fine discontinuous tubular pores; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.
Cy1—17 to 37 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots throughout; common very fine discontinuous tubular pores; 1 percent fine spherical gypsum masses throughout; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.
Cy2—37 to 47 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; massive; slightly hard, very friable, slightly sticky, slightly plastic; common very fine and common fine roots throughout; common very fine discontinuous tubular pores; 1 percent fine spherical gypsum masses throughout; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.
Cy3—47 to 60 inches; pale brown (10YR 6/3) silt loam, brown (10YR 5/3) moist; weak medium platy structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots throughout; common very fine discontinuous tubular pores; 1 percent fine threadlike gypsum threads throughout and 1 percent fine spherical gypsum masses throughout; 2 percent channers; strongly effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.
Cy4—60 to 80 inches; pale brown (10YR 6/3) loam, brown (10YR 5/3) moist; weak medium platy structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots throughout; 1 percent fine spherical gypsum masses throughout; strongly effervescent; moderately alkaline (pH 8.0).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 55 degrees
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 27 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: silt loam, clay loam or very fine sandy loam
Clay content: 12 to 35 percent
Fragments: 0 to 15 percent

Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 0 to 16 mmhos/cm
Sodium adsorption ratio: 0 to 50
Reaction: pH 7.9 to 9.4

C or Cy horizon:
Hue: 10YR to 2.5Y
Value: 6 or 7 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: stratified loamy sand to clay loam
Clay content: 10 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 to 4 percent
Electrical conductivity: 4 to 6 mmhos/cm
Sodium adsorption ratio: 2 to 30
Reaction: pH 7.4 to 8.4

The soils mapped as Ravola in map unit 80 are taxadjuncts to the series. The particle size control section for the Ravola Series is fine-silty. The typical pedon in map unit 80 has a fine-loamy particle size control section. This difference, however, does not significantly affect the use or management of the soils. In this map unit, 80, Ravola soils are fine-loamy, mixed, active, calcareous, mesic Typic Torrifluvents.

Redlands Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: mesas, structural benches
Parent material: eolian material derived from sandstone
Elevation: 4,800 to 5,700 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-loamy, mixed, superactive, mesic Typic Haplargids

Typical Pedon

Redlands fine sandy loam, 3 to 6 percent slopes; USGS Peters Nipple topographic quadrangle; 37 degrees 13 minutes 31 seconds north latitude and 109 degrees 0 minutes 28 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A1—0 to 2 inches; reddish brown (5YR 5/3) fine sandy loam, reddish brown (5YR 4/3) moist; weak fine granular structure; loose, loose, nonsticky, nonplastic; many very fine and common fine roots throughout; few pores; noneffervescent; slightly alkaline (pH 7.4); gradual smooth boundary.
A2—2 to 6 inches; reddish brown (5YR 5/4) fine sandy loam, reddish brown (5YR 4/4) moist; moderate coarse platy structure, and weak medium subangular blocky

structure; soft, very friable, nonsticky, nonplastic; many very fine and common fine roots throughout; common very fine tubular pores; noneffervescent; slightly alkaline (pH 7.6); gradual smooth boundary.

Bt1—6 to 15 inches; reddish brown (5YR 5/4) fine sandy loam, reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and common fine roots throughout; common very fine tubular pores; 2 percent distinct clay bridging; noneffervescent; slightly alkaline (pH 7.8); clear smooth boundary.

Bt2—15 to 22 inches; reddish brown (5YR 5/4) loam, reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots throughout; common very fine tubular pores; 10 percent distinct clay bridging; very slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Btk—22 to 41 inches; reddish brown (5YR 5/4) loam, reddish brown (5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine roots throughout; common very fine tubular pores; 5 percent distinct clay bridging; 10 percent fine irregular carbonate masses; slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Bk1—41 to 59 inches; light reddish brown (5YR 6/4) sandy loam, reddish brown (5YR 5/4) moist; weak medium subangular blocky structure; slightly hard, friable, nonsticky, nonplastic; common very fine roots throughout; few very fine tubular pores; 5 percent fine irregular carbonate masses; slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Bk2—59 to 73 inches; reddish brown (5YR 5/4) sandy loam, light reddish brown (5YR 6/4) moist; massive; soft, very friable, nonsticky, nonplastic; 1 percent fine irregular carbonate nodules; slightly effervescent; moderately alkaline (pH 8.4); gradual wavy boundary.

2Btk—73 to 80 inches; very pale brown (10YR 8/4) loam, yellowish brown (10YR 5/4) moist; massive; soft, very friable, nonsticky, nonplastic; 1 percent fine irregular carbonate nodules; slightly effervescent; moderately alkaline (pH 8.4).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 27 percent
Rock fragment content: 0 to 10 percent

A horizon:
Hue: 5YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: fine sandy loam
Clay content: 5 to 15 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 1 to 3 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.4 to 7.8

Bt or Btk horizon:
Hue: 5YR

Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: fine sandy loam or loam
Clay content: 18 to 27 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.9 to 8.4

Bk horizon:
Hue: 5YR
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: sandy loam or loam
Clay content: 10 to 20 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 3
Reaction: pH 7.9 to 8.4

Rizno Series

Depth class: very shallow to shallow
Drainage class: well
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Landform: mesas
Parent material: eolian material derived from sandstone
Elevation: 5,400 to 6,200 feet
Slope: 3 to 15 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Loamy, mixed, superactive, calcareous, mesic Lithic Ustic Torriorthents

Typical Pedon

Rizno very fine sandy loam, in an area of Rizno-Gapmesa complex, 3 to 9 percent slopes; USGS Purgatory Canyon topographic quadrangle; 36 degrees 57 minutes 45.8 seconds north latitude and 108 degrees 19 minutes 37.0 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 2 inches; yellowish red (5YR 5/6) very fine sandy loam, yellowish red (5YR 4/6) moist; moderate fine granular and weak coarse subangular blocky structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine roots throughout; common very fine dendritic tubular pores; noneffervescent; slightly alkaline (pH 7.5); clear smooth boundary.
C—2 to 9 inches; reddish brown (5YR 4/4) loam, dark reddish brown (5YR 3/4) moist;

weak medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; common very fine and common medium roots throughout; common very fine dendritic tubular pores; strongly effervescent; slightly alkaline (pH 8.0); abrupt smooth boundary.
2R—9 inches; sandstone.

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: degrees F
Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)
Surface fragments: 0 to 15 percent

Particle-size control section (weighted average):
Clay content: 8 to 18 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 5YR
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 3 to 6
Texture, fine earth fraction: very fine sandy loam
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

C horizon:
Hue: 2.5YR to 5 YR
Value: 4 to 7 dry; 3 to 6 moist
Chroma: 3 to 6
Texture, fine earth fraction: very fine sandy loam, loam, fine sandy loam or sandy loam
Clay content: 10 to 18 percent
Fragments: 0 to 35 percent
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.9 to 8.4

Romberg Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: canyons
Parent material: colluvium and slope alluvium derived from sandstone and shale
Elevation: 5,400 to 6,200 feet
Slope: 6 to 50 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches

Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Ustic Haplargids

Typical Pedon

Romberg very stony loam in an area of Romberg-Crosscan-Rock outcrop complex, 25 to 80 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Woods Canyon topographic quadrangle; 37 degrees 25 minutes 57 seconds north latitude and 108 degrees 46 minutes 0 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 50 percent gravel, 15 percent cobbles, 15 percent stones, 5 percent boulders.

A—0 to 2 inches; dark brown (7.5YR 4/4) very stony loam, dark brown (7.5YR 3/4) moist; moderate medium and coarse granular structure; soft, very friable, slightly sticky, slightly plastic; 15 percent gravel, 5 percent cobbles, and 30 percent stones; neutral (pH 7.2); clear wavy boundary.

BA—2 to 5 inches; dark brown (7.5YR 4/4) very stony clay loam, dark brown (7.5YR 3/4) moist; weak medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; 15 percent gravel, 5 percent cobbles, and 30 percent stones; slightly alkaline (pH 7.5); clear wavy boundary.

Bt—5 to 11 inches; brown (7.5YR 5/4) very stony clay loam, dark brown (7.5YR 4/4) moist; weak medium and coarse subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; 15 percent gravel, 5 percent cobbles, and 30 percent stones; violently effervescent; moderately alkaline (pH 8.2); gradual wavy boundary.

Btk—11 to 20 inches; light brown (7.5YR 6/4) very stony clay loam, dark brown (7.5YR 4/4) moist; weak medium and coarse subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; 15 percent gravel, 5 percent cobbles, and 30 percent stones; few medium soft masses of calcium carbonate; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Bk1—20 to 35 inches; brown (7.5YR 5/4) very stony clay loam, dark brown (7.5YR 4/4) moist; weak fine and medium subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; 15 percent gravel, 5 percent cobbles, and 30 percent stones; common medium soft masses of calcium carbonate; slightly effervescent; moderately alkaline (pH 8.4); clear wavy boundary.

Bk2—35 to 48 inches; brown (7.5YR 5/4) very stony clay loam, dark brown (7.5YR 4/4) moist; weak medium subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; 15 percent gravel, 5 percent cobbles, and 30 percent stones; few fine soft masses of calcium carbonate; violently effervescent; slightly alkaline (pH 7.6); clear wavy boundary.

Bk3—48 to 60 inches; brown (10YR 5/3) very stony clay loam, dark brown (10YR 4/3) moist; massive; very hard, firm, moderately sticky, slightly plastic; 15 percent gravel, 5 percent cobbles, and 30 percent stones; common fine soft masses of calcium carbonate; violently effervescent; moderately alkaline (pH 8.4).

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 54 to 58 degrees F
Surface fragments: 15 to 90 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent

Rock fragment content: 35 to 55 percent

A horizon:
Hue: 7.5YR to 2.5Y
Value: 3 to 5 dry; 3 to 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam
Clay content: 15 to 27 percent
Fragments: 35 to 70 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 7.8

Bt, or Btk horizon:
Hue: 7.5YR to 2.5YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam or loam
Clay content: 27 to 35 percent
Fragments: 35 to 55 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Bk horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 to 5
Texture, fine earth fraction: clay loam or loam
Clay content: 18 to 35 percent
Fragments: 35 to 70 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Roubideau Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: mesas
Parent material: eolian material derived from sandstone
Elevation: 6,800 to 7,800 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 130 to 150 days

Taxonomic class: Fine-silty, mixed, superactive, mesic Aridic Haplustalfs

Typical Pedon

Roubideau loam, 1 to 6 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Wetherill Mesa topographic quadrangle; 37 degrees 14 minutes 52 seconds north latitude and 108 degrees 32 minutes 11 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A1—0 to 2 inches; brown (7.5YR 5/3) loam, dark brown (7.5YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine roots throughout; noneffervescent; neutral (pH 7.0); abrupt smooth boundary.

A2—2 to 6 inches; brown (7.5YR 5/3) loam, dark brown (7.5YR 3/3) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine roots throughout; few medium discontinuous tubular pores; noneffervescent; neutral (pH 7.0); abrupt smooth boundary.

Bt1—6 to 12 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; very hard, firm, slightly sticky, slightly plastic; common very fine roots throughout; few very fine discontinuous tubular pores; few faint patchy clay films on faces of peds and in pores; noneffervescent; neutral (pH 7.0); clear smooth boundary.

Bt2—12 to 23 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; moderate medium prismatic structure; very hard, firm, slightly sticky, slightly plastic; common very fine roots throughout; common very fine discontinuous tubular pores; few faint patchy clay films on faces of peds and in pores; noneffervescent; neutral (pH 7.0); clear smooth boundary.

Bt3—23 to 36 inches; strong brown (7.5YR 5/6) loam, strong brown (7.5YR 4/6) moist; moderate medium subangular blocky structure; very hard, firm, slightly sticky, slightly plastic; common fine roots throughout; few very fine vesicular pores and few fine discontinuous tubular pores; common faint continuous clay films on faces of peds and in pores; noneffervescent; slightly alkaline (7.4); clear wavy boundary.

Bt4—36 to 38 inches; strong brown (7.5YR 5/6) channery loam, strong brown (7.5YR 4/6) moist; moderate medium subangular blocky structure; very hard, firm, slightly sticky, slightly plastic; common medium roots throughout; common faint continuous clay films on faces of peds and in pores; noneffervescent; 5 percent gravel and 15 percent channers; slightly alkaline (pH 7.4); clear smooth boundary.

2R—38 inches; Cliffhouse sandstone.

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 48 to 52 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (lithic)
Surface fragments: unspecified

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 20 to 40 percent

A horizon:
Hue: 7.5YR to 10YR
Value: 5 to 7 dry; 3 to 6 moist
Chroma: 1 to 4
Texture, fine earth fraction: loam

Clay content: 10 to 27 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 7.8

Bt horizon:
Hue: 5YR to 7.5YR
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 3 to 6
Texture, fine earth fraction: loam, clay loam or silty clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 20 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 7.8

Salamander Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: paleoterraces
Parent material: eolian material over alluvium derived from mixed sources (fig. 13)
Elevation: 4,800 to 5,700 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Loamy-skeletal, mixed, active, mesic Typic Calcigypsids

Typical Pedon

Salamander very fine sandy loam, in an area of Decorock-Salamander association, 1 to 50 percent slopes; USGS Sentinel Peak Southeast topographic quadrangle; 37 degrees 5 minutes 57 seconds north latitude and 108 degrees 49 minutes 46 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 20 percent gravel.

A—0 to 3 inches; light brown (7.5YR 6/4), very fine sandy loam, brown (7.5YR 4/4) moist; moderate medium platy structure parting to moderate medium granular; soft, very friable, nonsticky and nonplastic; common very fine roots throughout; 5 percent gravel; strongly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bk—3 to 10 inches; light brown (7.5YR 6/4) loam, brown (7.5YR 5/4) moist; weak medium subangular blocky structure; slightly hard, very friable, slightly sticky and slightly plastic; common very fine, common medium, and common fine roots throughout; 5 percent gravel; violently effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

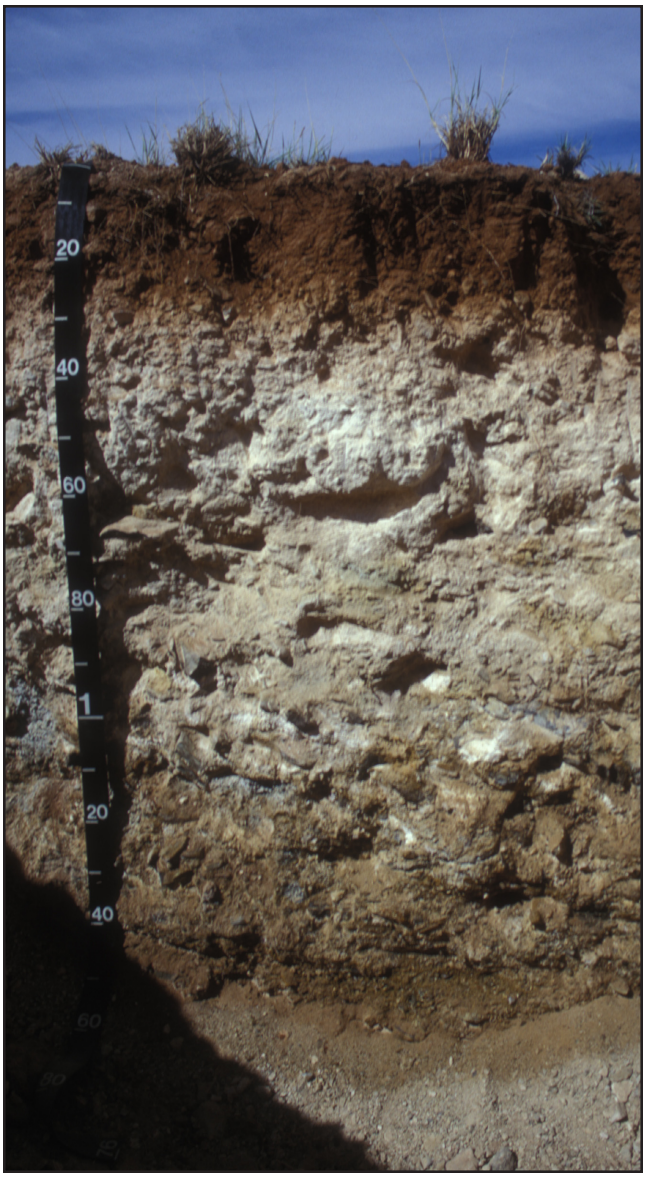

Figure 13.— Typical profile of Salamander very fine sandy loam forming on paleoterraces radiating out from the Sleeping Ute Mountains. The surface layer is derived from eolian material overlying material from shale and igneous material. A calcic horizon has formed above a gypsic horizon. Scale is in centimeters.

2Bk—10 to 27 inches; very pale brown (10YR 8/2) extremely gravelly loam, very pale brown (10YR 7/3) moist; massive; moderately hard, very friable, slightly sticky and nonplastic; common fine roots throughout and common very fine throughout; many fine irregular soft masses of carbonate throughout; 75 percent gravel; violently effervescent; moderately alkaline (pH 8.3); gradual smooth boundary.

2Bky—27 to 35 inches; very pale brown (10YR 8/2) extremely gravelly gypsiferous coarse sandy loam, light yellowish brown (10YR 6/4) moist; massive; moderately hard, very friable, nonsticky and nonplastic; common very fine roots throughout; many coarse irregular soft masses of carbonate and gypsum throughout; violently effervescent; 60 percent gravel, 5 percent cobbles; moderately alkaline (pH 7.9); gradual wavy boundary.

2By1—35 to 50 inches; very pale brown (10YR 8/3) extremely gravelly gypsiferous fine sandy loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; common very fine roots throughout; many coarse irregular nests of gypsum around stones; 65 percent gravel and 5 percent cobbles; strongly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary.

2By2—50 to 80 inches; very pale brown (10YR 7/4) extremely gravelly gypsiferous fine sandy loam, dark yellowish brown (10YR 5/4) moist; massive; slightly hard, very friable, nonsticky and nonplastic; few fine roots throughout; common medium irregular gypsum threads throughout; slightly effervescent; 65 percent gravel, 10 percent cobbles; slightly alkaline (pH 7.8).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to calcic horizon: 7 to 18 inches
Depth to gypsic horizon: 20 to 40 inches
Surface fragments: 10 to 60 percent

Particle-size control section (weighted average):
Clay content: 18 to 27 percent
Rock fragment content: 35 to 80 percent

A horizon:
Hue: 7.5YR or 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 to 5
Texture, fine earth fraction: very fine sandy loam
Clay content: 10 to 20 percent
Fragments: 0 to 25 percent, mainly igneous gravel
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 2
Reaction: slightly to moderately alkaline pH 7.4 to 8.4

2Bk horizon:
Hue: 7.5YR or 10YR
Value: 6 to 8 dry; 5 to 7 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam or sandy loam
Clay content: 18 to 27 percent
Fragments: 35 to 80 percent, mainly igneous gravel
Calcium carbonate equivalent: 10 to 60 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 2
Reaction: moderately alkaline pH 7.9 to 8.4

2By horizon:
Hue: 10YR
Value: 5 to 8 dry; 5 to 8 moist
Chroma: 3 to 5
Texture, fine earth fraction: gypsiferous sandy loam, gypsiferous loamy sand or gypsiferous fine sandy loam

Clay content: 5 to 18 percent
Fragments: 35 to 80 percent, mainly igneous gravel and cobble
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 15 to 40 percent
Electrical conductivity: 4 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 4
Reaction: slightly or moderately alkaline pH 7.4 to 8.4

Sharps Series

Local phase: dry
Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: mesas
Parent material: eolian material derived from sandstone over residuum derived from shale
Elevation: 5,400 to 6,200 feet
Slope: 6 to 12 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Fine-silty, mixed, superactive, mesic Ustic Haplargids

Typical Pedon

Sharps loam, in an area of Sharps, dry-Gapmesa complex, 6 to 12 percent slopes; USGS Mud Creek topographic quadrangle; 37 degrees 18 minutes 13.3 seconds north latitude and 108 degrees 41 minutes 1.7 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A1—0 to 2 inches; reddish brown (5YR 5/3) loam, reddish brown (5YR 4/3) moist; weak coarse platy structure; soft, very friable, nonsticky, nonplastic; noneffervescent; slightly alkaline (pH 7.4); abrupt smooth boundary.
A2—2 to 4 inches; reddish brown (5YR 5/3) loam, reddish brown (5YR 4/3) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky, slightly plastic; many very fine roots throughout; noneffervescent; slightly alkaline (pH 7.6); clear smooth boundary.
BA—4 to 12 inches; reddish brown (5YR 5/4) loam, reddish brown (5YR 4/3) moist; weak fine subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common very fine and common medium roots throughout; common very fine dendritic tubular pores; strongly effervescent; slightly alkaline (pH 7.6); clear smooth boundary.
Bt1—12 to 19 inches; reddish brown (5YR 5/4) clay loam, reddish brown (5YR 5/3) moist; moderate medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common very fine and common medium roots throughout; common very fine dendritic tubular pores; 5 percent faint clay films on faces of peds; violently effervescent; moderately alkaline (pH 8.0); clear smooth boundary.
Bt2—19 to 27 inches; light reddish brown (5YR 6/3) clay loam, reddish brown (5YR

5/3) moist; moderate medium subangular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; common medium roots throughout; common very fine dendritic tubular pores; 10 percent faint clay films on faces of peds; 1 percent fine irregular carbonate masses; violently effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

2Bk—27 to 32 inches; pink (5YR 7/4) clay loam, light reddish brown (5YR 6/4) moist; massive; firm, moderately hard, slightly sticky, slightly plastic; common medium roots throughout; 5 percent fine irregular carbonate masses; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

2Cr—32 inches.

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 5YR to 10YR
Value: 5 to 7 dry; 3 to 6 moist
Chroma: 2 to 6
Texture, fine earth fraction: loam
Clay content: 10 to 20 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 0 to 1 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Bt horizon:
Hue: 5YR to 7.5YR
Value: 5 to 7 dry; 3 to 6 moist
Chroma: 3 to 6
Texture, fine earth fraction: clay loam or loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Bk horizon (if present)
Hue: 5YR or 7.5YR
Value: 4 to 8 dry; 4 to 7 moist
Chroma: 4 to 8
Texture, fine earth fraction: loam, clay loam or silty clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 10 to 15 percent
Gypsum content: 0 percent

Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.9 to 8.4

The soils mapped as Sharps are taxadjuncts to the series. The Sharps series is in an ustic moisture regime that borders on aridic. The Sharps soils mapped in this survey are in an aridic moisture regime that borders ustic. This difference, however, does not significantly affect the use or management of the soils. In this survey, Sharps soils are fine-silty, mixed, superactive, mesic Ustic Haplargids.

Sheek Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: canyons
Parent material: colluvium and slope alluvium derived from sandstone and shale
Elevation: 7,100 to 8,500 feet
Slope: 6 to 80 percent

Climatic data:
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F
Frost-free period: 80 to 100 days

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Typic Haplustalfs

Typical Pedon

Sheek very stony sandy loam, in an area of Sheek-Archuleta-Rock outcrop complex, 25 to 80 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Thompson Park topographic quadrangle; 37 degrees 19 minutes 48 seconds north latitude and 108 degrees 13 minutes 42 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 15 percent gravel, 15 percent cobbles, 15 percent stones.

Oe—0 to 1 inch; moderately decomposed leaves, twigs, and needles; abrupt smooth boundary.

A—1 inch to 5 inches; brown (10YR 5/3) very stony sandy loam, dark brown (10YR 3/3) moist; moderate fine granular structure; hard, friable, slightly sticky, nonplastic; 10 percent gravel, 15 percent cobbles, and 15 percent stones; neutral (pH 6.8); clear wavy boundary.

Bt1—5 to 11 inches; brown (7.5YR 5/4) very stony clay loam, dark brown (7.5YR 4/4) moist; moderate fine subangular blocky structure; hard, firm, moderately sticky, moderately plastic; very few faint clay films on faces of peds; 15 percent gravel, 15 percent cobbles, and 20 percent stones; neutral (pH 6.8); gradual wavy boundary.

Bt2—11 to 17 inches; brown (7.5YR 5/4) very stony clay loam, dark brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, moderately sticky, moderately plastic; few faint clay films on faces of peds; 15 percent gravel, 15 percent cobbles, and 20 percent stones; neutral (pH 7.0); gradual wavy boundary.

Bt3—17 to 27 inches; brown (7.5YR 5/4) very stony clay loam, dark brown (7.5YR 4/4) moist; strong coarse subangular blocky structure parting to strong medium angular blocky; very hard, very firm, moderately sticky, moderately plastic;

common distinct clay films on faces of peds and in pores; 25 percent gravel, 10 percent cobbles, and 20 percent stones; slightly acid (pH 6.5); gradual wavy boundary.

Bt4—27 to 43 inches; brown (7.5YR 5/4) very stony clay loam, dark brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; very hard, firm, moderately sticky, moderately plastic; few distinct clay films on faces of peds; 25 percent gravel, 10 percent cobbles, and 20 percent stones; neutral (pH 6.6); gradual smooth boundary.

BC—43 to 60 inches; brown (7.5YR 5/4) very stony clay loam, dark brown (7.5YR 4/4) moist; massive to weak medium subangular blocky structure; very hard, very firm, moderately sticky, moderately plastic; 30 percent gravel, 5 percent cobbles, and 20 percent stones; slightly alkaline (pH 7.4).

Range in Characteristics

Soil moisture: typic ustic
Mean annual soil temperature: 45 to 49 degrees F
Depth to restrictive feature: more than 60 inches
Surface fragments: 20 to 60 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 35 to 70 percent

A or E horizon:
Hue: 7.5YR to 10YR
Value: 4 or 5 dry; 2 or 3 moist
Chroma: 2 to 4
Texture, fine earth fraction: sandy loam, loam
Clay content: 10 to 25 percent
Fragments: 45 to 90 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.8

Bt horizon:
Hue: 7.5YR to 2.5Y
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 4 to 6
Texture, fine earth fraction: sandy clay loam, loam or clay loam
Clay content: 18 to 35 percent
Fragments: 35 to 70 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.8

Sheppard Series

Depth class: very deep
Drainage class: somewhat excessively
Slowest permeability: 6.0 to 20 in/hr (rapid)
Landform: dunes

Parent material: eolian material derived from sandstone
Elevation: 4,800 to 5,700 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Mixed, mesic Typic Torripsamments

Typical Pedon

Sheppard fine sand, 1 to 6 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Wickiup Canyon topographic quadrangle; 37 degrees 17 minutes 30 seconds north latitude and 109 degrees 1 minute 06 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

C1—0 to 2 inches; light brown (7.5YR 6/4) fine sand, brown (7.5YR 5/4) moist; weak thick platy structure parting to single grain; loose, very friable, nonsticky and nonplastic; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.
C2—2 to 7 inches; light brown (7.5YR 6/4) fine sand, brown (7.5YR 5/4) moist; massive and single grain; soft, very friable, nonsticky and nonplastic; slightly effervescent; moderately alkaline (pH 8.4); gradual smooth boundary.
C3—7 to 60 inches; brown (7.5YR 5/4) fine sand, dark brown (7.5YR 4/4) moist; massive and single grain; soft, very friable, nonsticky and nonplastic; slightly effervescent; slightly alkaline (pH 7.8).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 4 to 8 percent
Rock fragment content: 0 to 5 percent

A horizon:
Hue: 7.5YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 4 to 8
Texture, fine earth fraction: fine sand
Clay content: 3 to 10 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 0 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

C horizon:
Hue: 5YR to 7.5YR
Value: 5 or 7 dry; 4 or 6 moist
Chroma: 3 to 8
Texture, fine earth fraction: loamy fine sand, fine sand or loamy sand
Clay content: 3 to 10 percent

Fragments: 0 to 5 percent fine gravel
Calcium carbonate equivalent: 0 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Sideshow Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: alluvial fans, terraces
Parent material: alluvium derived from shale
Elevation: 6,200 to 7,400 feet
Slope: 0 to 40 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Fine, smectitic, mesic Aridic Haplusterts

Typical Pedon

Sideshow silty clay loam, in an area of Zigzag-Sideshow complex, 25 to 65 percent slopes; USGS Trail Canyon topographic quadrangle; 37 degrees 7 minutes 32 seconds north latitude and 108 degrees 18 minutes 57 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 5 percent gravel.

A—0 to 3 inches; brown (10YR 5/3) silty clay loam, brown (10YR 4/3) moist; moderate medium granular structure; very hard, firm, very sticky, very plastic; common very fine and fine roots throughout; many fine pores; slightly effervescent; 1 percent gravel; moderately alkaline (pH 8.0); clear wavy boundary.

AB—3 to 6 inches; brown (10YR 5/3) clay, brown (10YR 4/3) moist; moderate coarse subangular blocky structure; very hard, firm, very sticky, very plastic; common very fine and fine roots throughout; common fine pores; 1 cm-wide cracks along ped faces; slightly effervescent; 1 percent gravel; moderately alkaline (pH 8.0); clear wavy boundary.

Bss—6 to 25 inches; brown (10YR 5/3) clay, dark grayish brown (10YR 4/2) moist; strong coarse prismatic structure parting to strong coarse angular blocky; extremely hard, very firm, very sticky, very plastic; common fine roots between peds; common fine tubular pores; intersecting slickensides; slightly effervescent; 1 percent sandstone gravel; moderately alkaline (pH 8.4); clear wavy boundary.

Bky—25 to 60 inches; brown (10YR 5/3) clay, dark grayish brown (10YR 4/2) moist; weak coarse angular blocky structure; extremely hard, very firm, very sticky, very plastic; common very fine and fine roots between peds; common fine tubular pores; common fine and medium threads and soft masses of lime and common fine and medium irregular masses of gypsum; slightly effervescent; 1 percent gravel; moderately alkaline (pH 8.2).

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 48 to 52 degrees F
Surface fragments: 0 to 5 percent gravel

Particle-size control section (weighted average):
- *Clay content:* 35 to 60 percent
- *Rock fragment content:* 0 to 5 percent

A horizon:
- *Hue:* 7.5YR to 2.5Y
- *Value:* 4 to 6 dry; 3 or 4 moist
- *Chroma:* 1 to 3
- *Texture, fine earth fraction:* silty clay loam
- *Clay content:* 27 to 40 percent
- *Fragments:* 0 to 5 percent gravel
- *Calcium carbonate equivalent:* 0 to 5 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 2 to 4 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 7.4 to 8.4

B horizon:
- *Hue:* 7.5YR to 2.5Y
- *Value:* 5 or 6 dry; 3 or 5 moist
- *Chroma:* 2 to 6
- *Texture, fine earth fraction:* silty clay loam, clay loam or clay
- *Clay content:* 35 to 60 percent
- *Fragments:* 0 to 5 percent gravel
- *Calcium carbonate equivalent:* 0 to 5 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 to 2 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 7.4 to 8.4

By horizon (if present):
- *Hue:* 7.5YR or 10YR
- *Value:* 5 or 6 dry; 3 or 5 moist
- *Chroma:* 2 to 6
- *Texture, fine earth fraction:* silty clay loam, clay loam or clay
- *Clay content:* 35 to 60 percent
- *Fragments:* 0 to 5 percent gravel
- *Calcium carbonate equivalent:* 0 to 5 percent
- *Gypsum content:* 1 to 5 percent
- *Electrical conductivity:* 0 to 2 mmhos/cm
- *Sodium adsorption ratio:* 0 to 2
- *Reaction:* pH 7.4 to 8.4

Simpatico Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: drainageways

Parent material: alluvium derived from sandstone and shale
Elevation: 6,200 to 7,400 feet
Slope: 1 to 3 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Fine-silty, mixed, superactive, mesic Pachic Argiustolls

Typical Pedon

Simpatico loam, 1 to 3 percent slopes; USGS Loma Linda topographic quadrangle; 37 degrees 12 minutes 21 seconds north latitude and 107 degrees 46 minutes 57 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

Ap—0 to 6 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak coarse platy structure parting to moderate medium granules; soft, very friable, slightly sticky, slightly plastic; slightly alkaline (pH 7.4); clear smooth boundary.

AB—6 to 12 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure parting to moderate medium granules; soft, very friable, slightly sticky, slightly plastic; neutral (pH 7.0); gradual smooth boundary.

Bt1—12 to 24 inches; brown (7.5YR 4/2) silty clay loam, dark brown (7.5YR 3/2) moist; weak moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; many prominent clay films on faces of peds and in pores; slightly alkaline (pH 7.4); clear smooth boundary.

Bt2—24 to 35 inches; brown (7.5YR 5/2) silty clay loam, dark brown (7.5YR 3/2) moist; moderate medium subangular blocky structure; hard, friable, moderately sticky, moderately plastic; common prominent clay films on faces of peds; slightly alkaline (pH 7.4); abrupt irregular boundary.

BC—35 to 45 inches; reddish brown (5YR 5/4) silty clay loam, reddish brown (5YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; slightly alkaline (pH 7.4); abrupt irregular boundary.

2C—45 to 60 inches; light brown (7.5YR 6/4) very cobbly loam, brown (7.5YR 5/4) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; 10 percent gravel and 35 percent cobble; slightly effervescent, moderately alkaline (pH 8.0).

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 48 to 52 degrees F
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 27 to 35 percent
Rock fragment content: 0 to 5 percent

A horizon:
Hue: 7.5YR to 10YR
Value: 3 to 5 dry; 2 or 3 moist
Chroma: 1 to 3
Texture, fine earth fraction: loam

Clay content: 10 to 27 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 7.8

Bt horizon:
Hue: 5YR to 7.5YR
Value: 3 to 5 dry; 2 to 4 moist
Chroma: 2 or 4
Texture, fine earth fraction: silty clay loam or clay loam
Clay content: 27 to 35 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 7.8

2C horizon (if present):
Hue: 5YR to 10YR
Texture, fine earth fraction: loam
Clay content: 10 to 27 percent
Fragments: 0 to 65 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 7.8

Snapill Series

Depth class: deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: mesas, plateaus
Parent material: eolian material and slope alluvium derived from sandstone and siltstone
Elevation: 4,800 to 6,100 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-silty, mixed, superactive, mesic Ustic Calciargids

Typical Pedon

Snapill very fine sandy loam, 1 to 6 percent slopes, from the adjoining Shiprock Soil Survey Area; USGS Adobe Downs Ranch, New Mexico topographic quadrangle; 36 degrees 57 minutes 15 seconds north latitude and 108 degrees 3 minutes 58 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 3 inches; brown (7.5YR 5/4) very fine sandy loam, brown (7.5YR 4/4) moist; weak thin platy structure parting to weak fine granular; soft, very friable, slightly sticky, nonplastic; common very fine and few fine roots; very few vesicular pores; mildly alkaline (pH 7.6); clear smooth boundary.

Bt1—3 to 8 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak coarse subangular blocky structure; soft, friable, slightly sticky, slightly plastic; common very fine and fine roots; few fine tubular pores; few thin clay films on faces of peds and lining pores; slightly effervescent; mildly alkaline (pH 7.8); clear smooth boundary.

Bt2—8 to 13 inches; brown (7.5YR 5/4) loam, brown (7.5YR 4/4) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common fine and few very fine roots; common very fine and few fine tubular pores; few thin clay films on faces of peds and lining pores; strongly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

Btk1—13 to 22 inches; light brown (7.5YR 6/4) loam, brown, (7.5YR 5/4) moist; moderate medium and coarse subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few fine and very fine roots; few very fine tubular pores; few thin clay films on faces of peds and lining pores; strongly effervescent, secondary calcium carbonate segregated in few fine irregularly shaped soft masses and as accumulations on faces of peds; moderately alkaline (pH 8.0); abrupt smooth boundary.

Btk2—22 to 38 inches; light brown (7.5YR 6/4) loam, brown (7.5YR 4/4) moist; strong medium subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; very few fine tubular pores; common thin clay films on faces of peds and lining pores; violently effervescent, secondary calcium carbonate segregated in many medium and large irregularly shaped soft masses and as fine accumulations on faces of peds; strongly alkaline (pH 8.6); clear smooth boundary.

2Bk—38 to 53 inches; white (10YR 8/2) parachannery loam, pale brown (10YR 6/3) moist; weak coarse subangular blocky structure; hard, friable, slightly sticky, slightly plastic; few very fine roots; 25 percent parachanners; strongly effervescent, secondary calcium carbonate segregated in few fine irregularly shaped soft masses and filaments; strongly alkaline (pH 8.8); clear smooth boundary.

2Cr—53 inches; interbedded shale and soft sandstone bedrock.

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Depth to restrictive feature: 40 to 60 inches to bedrock (paralithic)
Depth to calcic horizon: 9 to 22 inches
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 27 percent
Rock fragment content: 0 to 5 percent

A horizon:
Hue: 7.5YR
Value: 5 dry; 4 moist
Chroma: 4
Texture, fine earth fraction: very fine sandy loam
Clay content: 10 to 18 percent
Fragments: 0 to 5 percent

Calcium carbonate equivalent: 3 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 7.8

Bt horizon:
Hue: 5YR to 7.5YR
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 4
Texture, fine earth fraction: loam or sandy clay loam
Clay content: 18 to 27 percent
Fragments: o to 5 percent
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 5 to 13
Reaction: pH 7.4 to 8.4

Btk and Bk horizon:
Hue: 5YR to 7.5YR
Value: 5 to 8 dry; 5 or 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: loam, sandy clay loam, very fine sandy or fine sandy loam
Clay content: 18 to 27 percent
Fragments: 0 to 5 percent, lithic, 0 to 30 percent paralithic
Calcium carbonate equivalent: 15 to 40 percent
Gypsum content: 0 percent
Electrical conductivity: 2 to 8 mmhos/cm
Sodium adsorption ratio: 5 to 30
Reaction: pH 7.9 to 9.0

Stephouse Series

Depth class: very shallow to shallow
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: mesas
Parent material: residuum derived from sandstone and shale
Elevation: 6,800 to 7,800 feet
Slope: 3 to 10 percent

Climatic data:
Mean annual precipitation: 16 to 19 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 130 to 150 days

Taxonomic class: Loamy, mixed, superactive, mesic Lithic Calciustepts

Typical Pedon

Stephouse gravelly fine sandy loam in an area of Stephouse-Rock outcrop complex, 3 to 10 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Wetherill Mesa topographic quadrangle; 37 degrees 8 minutes 56 seconds north latitude and 108 degrees 30 minutes 57 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 50 percent gravel, 3 cobbles, 1 percent stones.

A—0 to 1 inch; yellowish brown (10YR 5/4) gravelly fine sandy loam, brown (10YR 4/3) moist; single grain; loose nonsticky, nonplastic; few very fine roots throughout; common fine rounded soft masses of carbonate; 30 percent gravel; strongly effervescent; moderately alkaline (pH 8.3); abrupt smooth boundary.

Bk1—1 inch to 3 inches; yellowish brown (10YR 5/4) gravelly fine sandy loam, brown (10YR 4/3) moist; weak very fine granular; soft, very friable, slightly sticky, nonplastic; common very fine, fine, and medium roots throughout; common fine rounded soft masses of carbonate; 20 percent gravel; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Bk2—3 to 8 inches; pale brown (10YR 6/3) gravelly fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky, nonplastic; common very fine, fine, and medium roots throughout; many medium rounded soft masses of carbonate; 30 percent gravel; violently effervescent; moderately alkaline (pH 8.4); clear smooth boundary.

Bk3—8 to 12 inches; pale brown (10YR 6/3) very gravelly fine sandy loam, brown (10YR 5/3) moist; massive; soft, very friable, slightly sticky, nonplastic; common very fine, fine, and medium roots throughout; many medium rounded soft masses of carbonate; 40 percent gravel; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

R—12 inches; hard Cliffhouse sandstone.

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 49 to 52 degrees F
Depth to restrictive feature: 6 to 20 inches to bedrock (lithic)
Depth to calcic horizon: 0 to 6 inches
Surface fragments: 0 to 60 percent

Particle-size control section (weighted average):
Clay content: 8 to 18 percent
Rock fragment content: 5 to 35 percent

A horizon:
Hue: 7.5YR to 10YR
Value: 5 to 7 dry; 4 or 5 moist
Chroma: 3 to 6
Texture, fine earth fraction: fine sandy loam or sandy loam
Clay content: 8 to 18 percent
Fragments: 5 to 50 percent
Calcium carbonate equivalent: 10 to 30 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.9 to 8.4

Bk horizon:
Hue: 7.5YR to 10YR
Value: 5 to 7 dry; 4 or 5 moist
Chroma: 3 to 6
Texture, fine earth fraction: fine sandy loam, sandy loam or loam
Clay content: 8 to 18 percent
Fragments: 10 to 50 percent
Calcium carbonate equivalent: 15 to 40 percent
Gypsum content: 0 percent

Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.9 to 8.4

Strych Series

Depth class: very deep
Drainage class: well
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Landform: fan terraces, landslides
Parent material: alluvium and colluvium derived from sandstone and shale
Elevation: 5,400 to 6,200 feet
Slope: 15 to 70 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Ustic Haplocalcids

Typical Pedon

Strych extremely flaggy very fine sandy loam, in an area of Strych-Eagleye-Rock outcrop complex, 15 to 70 percent slopes, from the adjoining Shiprock Soil Survey Area; USGS Palmer Mesa topographic quadrangle, 36 degrees 59 minutes 8 seconds north latitude and 108 degrees 32 minutes 46 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 25 percent channers, 20 percent flagstones, 15 percent stones, and 10 percent boulders.

A—0 to 3 inches; pale brown (10YR 6/3) extremely flaggy very fine sandy loam, brown (10YR 4/3) moist; weak medium platy structure parting to weak fine granular; soft, very friable, slightly sticky, nonplastic; few very fine and fine roots; few very fine irregularly shaped pores; 25 percent channers, 20 percent flagstones, 15 percent stones, and 10 percent boulders; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Bk1—3 to 15 inches; very pale brown (10YR 7/3) very flaggy very fine sandy loam, yellowish brown (10YR 5/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, nonplastic; common very fine, common fine, few medium, and few coarse roots throughout; few very fine tubular pores; 20 percent channers, 15 percent flagstones, and 5 percent stones; common fine and common medium, irregular carbonate masses on faces of peds and on rock fragments; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Bk2—15 to 28 inches; very pale brown (10YR 8/4) very stony very fine sandy loam, light yellowish brown (10YR 6/4) moist; moderate coarse subangular blocky structure; hard, firm, slightly sticky, nonplastic; few very fine and fine roots throughout; few very fine and few fine tubular pores; 20 percent channers, 10 percent flagstones, and 15 percent stones; common fine and common medium irregular carbonate masses on faces of peds and on rock fragments; violently effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

Bk3—28 to 47 inches; light yellowish brown (10YR 6/4) very stony very fine sandy loam, yellowish brown (10YR 5/6) moist; moderately coarse subangular blocky structure; hard, firm, slightly sticky, nonplastic; common very fine and few fine roots throughout; few fine and few very fine tubular pores; 20 percent channers,

15 percent flagstone, 15 percent stones, few fine irregular carbonate masses on faces of peds and on rock fragments; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

BC—47 to 64 inches; light yellowish brown (10YR 6/4) very stony very fine sandy loam, yellowish brown (10YR 5/6) moist; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky, nonplastic; few very fine and few fine roots throughout; few very fine tubular pores; 25 percent channers, 10 percent flagstones, and 15 percent stones; slightly effervescent; strongly alkaline (pH 8.8).

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Depth to calcic horizon: 11 to 39 inches
Surface fragments: 35 to 90 percent

Particle-size control section (weighted average):
Clay content: 8 to 18 percent
Rock fragment content: 35 to 75 percent

A horizon:
Hue: 5YR to 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: very fine sandy loam
Clay content: 8 to 18 percent
Fragments: 35 to 80 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.9 to 8.4

Bk1 horizon:
Hue: 5YR to 10YR
Value: 6 to 8 dry; 4 to 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: very fine sandy loam
Clay content: 8 to 18 percent
Fragments: 35 to 60 percent
Calcium carbonate equivalent: 10 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Bk2 and Bk3 horizon:
Hue: 5YR to 10YR
Value: 6 to 8 dry; 4 to 7 moist
Chroma: 4 to 7
Texture, fine earth fraction: very fine sandy loam, fine sandy loam
Clay content: 8 to 18 percent
Fragments: 40 to 60 percent
Calcium carbonate equivalent: 10 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm

Sodium adsorption ratio: 5 to 13
Reaction: pH 7.9 to 9.0

BC horizon:
Hue: 5YR to 10YR
Value: 5 to 7 dry; 4 or 5 moist
Chroma: 2 to 6
Texture, fine earth fraction: very fine sandy loam, loamy fine sand, fine sandy loam
Clay content: 5 to 18 percent
Fragments: 15 to 60 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 5 to 13
Reaction: pH 7.9 to 9.0

Taqoci Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: paleoterraces, fan remnants
Parent material: eolian material over old alluvium derived from mixed sources
Elevation: 4,800 to 5,700 feet
Slope: 2 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Natrigypsids

Typical Pedon

Taqoci very fine sandy loam, in an area of Yogovuci-Taqoci complex, 2 to 6 percent slopes; USGS Mariano Wash West topographic quadrangle; 37 degrees 8 minutes 48.90 seconds north latitude and 108 degrees 58 minutes 7.80 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 7 percent gravel.

A—0 to 3 inches; light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) moist; moderate coarse platy structure parting to moderate very fine granular; soft, very friable, nonsticky and nonplastic; many very fine and few fine roots throughout; 4 percent igneous and sedimentary gravel; strongly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.
BA—3 to 9 inches; brown (7.5YR 5/4) very fine sandy loam, brown (7.5YR 4/4) moist; moderate very thick platy structure parting to weak medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots throughout; many very fine dendritic tubular pores; few distinct clay films on vertical faces of peds; few fine cylindrical masses of carbonate; 4 percent igneous and sedimentary gravel; strongly effervescent; moderately alkaline (pH 8.3); clear smooth boundary.
Btkn1—9 to 14 inches; brown (7.5YR 5/4) clay loam, brown (7.5YR 4/4) moist; moderate very coarse prismatic structure parting to moderate medium subangular

blocky; very hard, extremely firm, moderately sticky and moderately plastic; few very fine roots throughout; common very fine and few medium dendritic tubular pores; common distinct clay films on faces of peds; common medium irregular masses of carbonate; 1 percent igneous and sedimentary gravel; strongly effervescent; strongly alkaline (pH 9.0); clear smooth boundary.

Btkn2—14 to 26 inches; light brown (7.5YR 6/4) sandy clay loam, brown (7.5YR 5/4) moist; moderate very coarse prismatic structure parting to moderate medium subangular blocky and moderate fine angular blocky; very hard, extremely firm, very sticky and very plastic; few very fine roots throughout; common very fine and few medium dendritic pores; common distinct clay films on faces of peds; many medium irregular masses of carbonate; 3 percent igneous and sedimentary gravel; strongly effervescent; very strongly alkaline (pH 9.1); clear smooth boundary.

Bkn—26 to 37 inches; light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 4/4) moist; moderate very coarse prismatic structure parting to moderate medium angular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine dendritic tubular pores; few distinct clay films on faces of peds; common medium irregular masses of carbonate; 5 percent igneous and sedimentary gravel; strongly effervescent; moderately alkaline (pH 8.3); clear wavy boundary.

2Bkny1—37 to 52 inches; very pale brown (10YR 7/4) sandy clay loam, light yellowish brown (10YR 6/4) moist; weak very coarse prismatic structure parting to moderate medium angular blocky; slightly hard, friable, slightly sticky and slightly plastic; many very fine dendritic tubular pores; very few distinct clay films on faces of peds; common fine irregular masses of carbonate; many fine irregular nests of gypsum; 5 percent igneous and sedimentary gravel; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

2Bkny2—52 to 73 inches; very pale brown (10YR 7/4) extremely gravelly sandy loam, light yellowish brown (10YR 6/4) moist; massive; slightly hard, friable, slightly sticky and slightly plastic; common very fine interstitial pores; common medium irregular masses of carbonate; common fine irregular nests of gypsum; 80 percent gravel and 5 percent cobbles (igneous and sedimentary); strongly effervescent; moderately alkaline (pH 8.1); clear smooth boundary.

2Bkny3—73 to 80 inches; very pale brown (10YR 7/4) very gravelly coarse sandy loam, light yellowish brown (10YR 6/4) moist; single grain; loose, loose, nonsticky and nonplastic; few very fine interstitial pores; common fine irregular masses of carbonate; few fine irregular gypsum crystals on bottom of rock fragments; 50 percent gravel and 1 percent cobbles (igneous and sedimentary); strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to calcic horizon: 8 to 20 inches
Depth to gypsic horizon: 20 to 40 inches
Depth to natric horizon: 2 to 20 inches
Surface fragments: 0 to 15 percent gravel

Particle-size control section (weighted average):
Clay content: 18 to 27 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 7.5YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4

Texture, fine earth fraction: very fine sandy loam or loam
Clay content: 8 to 15 percent
Fragments: 0 to 10 gravel
Calcium carbonate equivalent: 2 to 15 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 1 to 13
Reaction: pH 7.9 to 9.0

Btkn horizon:
Hue: 7.5YR
Value: 5 or 7 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam, clay loam, sandy clay loam or very fine sandy loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 10 to 20 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 2 to 8 mmhos/cm
Sodium adsorption ratio: 13 to 30
Reaction: pH 8.5 to 9.5

2Bkny horizon:
Hue: 10YR
Value: 6 or 7 dry; 5 or 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: sandy loam or loam
Clay content: 5 to 27 percent
Fragments: 5 to 50 percent
Calcium carbonate equivalent: 10 to 15 percent
Gypsum content: 1 to 15 percent
Electrical conductivity: 8 to 16 mmhos/cm
Sodium adsorption ratio: 5 to 20
Reaction: pH 7.9 to 8.4

Tocito Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: terraces
Parent material: alluvium derived from shale and siltstone
Elevation: 4,800 to 5,700 feet
Slope: 1 to 3 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 140 to 160 days

Taxonomic class: Fine-silty, mixed, active, calcareous, mesic Typic Torriorthents

Typical Pedon

Tocito silt loam, 1 to 3 percent slopes, from the adjoining Shiprock Soil Survey Area; USGS Shiprock, New Mexico topographic quadrangle; 36 degrees 46 minutes 49

seconds north latitude and 108 degrees 43 minutes 18 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 1 percent gravel.

Ap—0 to 6 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 4/3) moist; weak thick platy structure parting to moderate medium granular; soft, very friable, slightly sticky, slightly plastic; many very fine roots; common very fine tubular pores; strongly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

AB—6 to 12 inches; pale brown (10YR 6/3) clay loam, dark brown (10YR 4/2) moist; moderate medium subangular blocky structure; slightly hard, friable, sticky, plastic; many fine and common very fine roots; common fine and very fine tubular pores; strongly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

By—12 to 16 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; moderate coarse subangular blocky structure; hard, friable, sticky, plastic; common fine and very fine roots; few fine and common very fine tubular pores; secondary silt-sized gypsum crystals segregated in few fine irregularly shaped accumulations on ped faces and as filaments; strongly effervescent; moderately alkaline (pH 7.9); clear wavy boundary.

Cy1—16 to 28 inches; light brownish gray (10YR 6/2) silt loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; few medium and very fine roots; few fine and common very fine tubular pores; few lamina of very fine sandy loam; secondary silt-sized gypsum crystals segregated in very few fine irregularly shaped filaments; strongly effervescent; moderately alkaline; clear smooth boundary.

Cy2—28 to 49 inches; pale brown (10YR 6/3) clay loam, brown (10YR 5/3) moist; massive; hard, firm, moderately sticky, moderately plastic; few medium and very fine roots; few fine and very fine tubular pores; few lamina of silt loam; secondary silt-sized gypsum crystals segregated in very few fine irregularly shaped filaments; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

Cy3—49 to 70 inches; pale brown (10YR 6/3) silty clay loam, brown (10YR 5/3) moist; massive; hard, firm, moderately sticky, moderately plastic; few very fine roots; few fine and very fine tubular pores; few lamina of silt loam, secondary silt-sized gypsum crystals segregated in very few fine irregularly shaped filaments; strongly effervescent; moderately alkaline (pH 8.0).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 57 degrees F
Surface fragments: 0 to 15 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3
Texture, fine earth fraction: silt loam or very fine sandy loam
Clay content: 12 to 18 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 5 to 10 percent

Gypsum content: 0 to 1 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 9.0

By horizon (if present):
Hue: 10YR
Value: 5 to 6 dry; 4 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: silty clay loam, clay loam or loam
Clay content: 27 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

C horizon:
Hue: 10YR
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 2 to 4
Texture, fine earth fraction: stratified very fine sandy loam to silty clay loam
Clay content: 18 to 25 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 10 to 15 percent
Gypsum content: 1 to 5 percent
Electrical conductivity: 4 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Tohona Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: cuestas, mesas
Parent material: slope alluvium and residuum from shale
Elevation: 4,800 to 5,700 feet
Slope: 2 to 12 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine, smectitic, mesic Vertic Natrigypsids

Typical Pedon

Tohona very gravelly sandy clay loam, in an area of Tohona-Kimnoli-Claysprings complex, 2 to 45 percent slopes; from the adjoining Shiprock Soil Survey Area; USGS Teec Nos Pos topographic quadrangle, 36 degrees 57 minutes 44 seconds north latitude and 109 degrees 0 minutes 31 seconds west longitude. NAD 27 (colors are for dry soils unless otherwise noted).

Surface fragments: 50 percent gravel, 5 percent cobble.

A—0 to 1 inch; light brown (7.5YR 6/4) very gravelly sandy clay loam, brown (7.5YR 4/3) moist; moderate thick platy structure parting to moderate fine granular; slightly hard, friable, slightly sticky, slightly plastic; few very fine roots; common fine vesicular pores; 50 percent gravel and 5 percent cobbles; slightly effervescent; slightly alkaline (pH 7.6); abrupt smooth boundary.

Btn—1 inch to 4 inches; light reddish brown (5YR 6/4) clay, reddish brown (5YR 5/4) moist; strong medium prismatic structure; very hard, very firm, very sticky, very plastic; few fine and few very fine roots throughout; many very fine tubular pores; few thin cracks ¼- to ¾-inch-wide filled with light brown sandy clay loam; common moderately thick clay films on faces of peds and lining pores; 10 percent gravel; strongly effervescent; strongly alkaline (pH 8.7); clear smooth boundary.

Btkn—4 to 11 inches; light reddish brown (5YR 6/4) clay, reddish brown (5YR 5/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; very hard, very firm, very sticky, very plastic; common very fine and few medium roots throughout; common very fine tubular pores; few thin clay films on faces of peds and lining pores; 5 percent gravel; few fine and few medium irregular carbonate masses on faces of peds and in soft masses; strongly effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

By1—11 to 19 inches; light reddish brown (5YR 6/4) with light gray (5Y 7/1) gypsiferous silty clay loam, yellowish red (5YR 5/6) with light olive gray (5Y 6/2) moist; weak medium prismatic structure parting to moderate coarse subangular blocky; hard, firm, sticky, plastic; few fine and common very fine roots; few very fine tubular pores; 15 percent parachanners; 5 percent gravel; common fine irregular gypsum crystals on faces of peds and on rock fragments; slightly effervescent; slightly alkaline (pH 7.7); clear smooth boundary.

By2—19 to 33 inches; light gray (5Y 7/1) gypsiferous silty clay loam, light olive gray (5Y 6/2) moist; massive, platy rock structure; hard, firm, sticky, plastic; few very fine roots; few very fine irregular pores; 60 percent parachanners; 10 percent gravel; few fine and few medium irregular gypsum crystals on rock fragments; very slightly effervescent; slightly alkaline (pH 7.7); clear smooth boundary.

Cr—33 inches; Mancos shale.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: degrees F
Depth to restrictive feature: 30 to 40 inches to bedrock (paralithic)
Depth to gypsic horizon: 10 to 24 inches
Depth to natric horizon: 10 to 19 inches

Particle-size control section (weighted average):
Clay content: 40 to 60 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 5YR to 7.5YR
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 3 to 6
Texture, fine earth fraction: very gravelly sandy clay loam
Clay content: 20 to 30 percent
Fragments: 35 to 60 percent, mainly gravel
Calcium carbonate equivalent: 3 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 7.8

Btn or Btkn horizon:
Hue: 5YR to 7.5YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 4 to 6
Texture, fine earth fraction: clay
Clay content: 40 to 60 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 13 to 30
Reaction: pH 8.5 to 9.6

By or Cy horizon:
Hue: 2.5YR to 5GY
Value: 6 or 7 dry; 5 or 6 moist
Chroma: 1 to 6
Texture, fine earth fraction: gypsiferous silty clay loam or gypsiferous clay loam
Clay content: 35 to 50 percent
Fragments: 0 to 15 percent
Parafragments: 15 to 70 percent
Calcium carbonate equivalent: 2 to 5 percent
Gypsum content: 15 to 30 percent
Electrical conductivity: 8 to 16 mmhos/cm
Sodium adsorption ratio: 5 to 13
Reaction: pH 7.4 to 8.4

Torriorthents

Depth class: very shallow to very deep
Drainage class: well to somewhat excessively
Slowest permeability: 0.06 to 20 in/hr (slow)
Landform: escarpments, canyons, terraces, knobs, hills
Parent material: colluvium, alluvium, residuum from mixed sources
Elevation: 4,800 to 7,000 feet
Slope: 12 to 100 percent

Climatic data:
Mean annual precipitation: 7 to 16 inches
Mean annual air temperature: 50 to 56 degrees F
Frost-free period: 100 to 160 days

Taxonomic class: Torriorthents

Reference Pedon

Torriothents, from the adjoining Cortez Soil Survey Area; in an area of Torriothents-Badlands complex, 25 to 100 percent slopes; USGS Cortez quadrangle; 37 degrees 16 minutes 10 seconds north latitude and 108 degrees 35 minutes 24 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 40 percent gravel, 10 percent cobbles, 15 percent stones.

A—0 to 4 inches; very pale brown (10YR 7/4) silty clay loam, olive brown (2.5Y 4/3) moist; moderate fine granular structure; moderately hard, very friable, slightly sticky, slightly plastic; common very fine, common fine, and few medium roots

throughout; violently effervescent; 2 percent gravel; moderately alkaline (pH 8.2); abrupt smooth boundary.
C1—4 to 11 inches; very pale brown (10YR 7/4) silty clay loam, olive brown (2.5Y 4/3) moist; weak medium platy structure; slightly hard, very friable, slightly sticky, slightly plastic; common very fine, common fine, and few medium roots throughout; common very fine and common fine discontinuous tubular pores; violently effervescent; 1 percent gravel; moderately alkaline (pH 8.2); clear smooth boundary.
C2—11 to 14 inches; very pale brown (10YR 7/4) silty clay loam, olive brown (2.5Y 4/3) moist; massive; slightly hard, very friable, slightly sticky, slightly plastic; common very fine and common fine roots throughout; common very fine discontinuous tubular pores; strongly effervescent; 1 percent gravel; moderately alkaline (pH 8.2); clear smooth boundary.
Cr—14 inches; soft Mancos shale.

Range in Characteristics

Soil moisture: typic aridic to aridic ustic
Mean annual soil temperature: 48 to 58 degrees F

Particle-size control section (weighted average):
Clay content: 27 to 60 percent
Rock fragment content: 0 to 85 percent

A horizon:
Hue: 7.5YR to 2.5Y
Value: 5 to 7 dry; 3 to 5 moist
Chroma: 2 to 6
Clay content: 10 to 20 percent
Fragments: 0 to 60 percent
Calcium carbonate equivalent: 1 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 6.6 to 9.0

C horizon:
Hue: 10YR to 2.5Y
Value: 5 to 7 dry; 3 to 7 moist
Chroma: 2 to 6
Texture, fine earth fraction: clay, clay loam or silty clay loam
Clay content: 27 to 60 percent
Fragments: 0 to 30 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 to 3 percent
Electrical conductivity: 0 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 10
Reaction: pH 6.6 to 9.0

Towaoc Series

Depth class: very deep
Drainage class: well
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Landform: mountain
Parent material: slope alluvium and colluvium derived from diorite

Elevation: 7,100 to 9,000 feet
Slope: 6 to 75 percent

Climatic data:
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F
Frost-free period: 80 to 100 days

Taxonomic class: Loamy-skeletal, mixed, superactive, frigid Typic Haplustalfs

Typical Pedon

Towaoc very gravelly sandy loam, 35 to 75 percent slopes; USGS Mariano Wash East topographic quadrangle; 37 degrees 14 minutes 22.03 seconds north latitude and 108 degrees 48 minutes 51.10 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 5 percent gravel, 5 percent cobbles, 1 percent stones.

A1—0 to 2 inches; brown (7.5YR 4/2) very gravelly sandy loam, dark brown (7.5YR 3/2) moist; moderate very fine granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine, common fine, few medium, and few coarse roots throughout; 30 percent gravel, 5 percent cobbles, and 1 percent stones; noneffervescent; slightly acid, pH 6.2; clear smooth boundary.

A2—2 to 5 inches; brown (7.5YR 4/2) very gravelly sandy loam, dark brown (7.5YR 3/2) moist; weak fine subangular blocky structure and weak medium subangular blocky structure; soft, very friable, slightly sticky, slightly plastic; many very fine and common fine roots, few medium and few coarse roots throughout; 30 percent gravel, 5 percent cobbles, and 1 percent stones; noneffervescent; neutral, pH 6.6; clear smooth boundary.

BA—5 to 12 inches; brown (7.5YR 4/4) very gravelly sandy loam, brown (7.5YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and common fine roots, few medium, and few coarse roots throughout; few very fine dendritic tubular pores; 35 percent gravel, 15 percent cobbles, and 1 percent stones; noneffervescent; neutral, pH 7.0; clear smooth boundary.

Bt1—12 to 28 inches; brown (7.5YR 4/4) very gravelly sandy loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine, common fine, few medium, and few coarse roots throughout; few very fine dendritic tubular pores; 15 percent patchy distinct clay films on all faces of peds; 35 percent gravel, 15 percent cobbles, and 1 percent stones; noneffervescent; neutral, pH 7.0; gradual smooth boundary.

Bt2—28 to 41 inches; strong brown (7.5YR 4/6) very gravelly loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common very fine, common fine, few medium, and few coarse roots throughout; 25 percent patchy distinct clay films on all faces of peds; 35 percent gravel, 15 percent cobbles, and 1 percent stones; noneffervescent; neutral, pH 7.0; gradual smooth boundary.

Bt3—41 to 56 inches; brown (7.5YR 5/4) very gravelly loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common very fine, common fine, few medium, and few coarse roots throughout; 50 percent patchy distinct clay films on all faces of peds; 35 percent gravel, 15 percent cobbles, and 1 percent stones; noneffervescent; neutral, pH 7.0; gradual smooth boundary.

Bt4—56 to 80 inches; brown (7.5YR 5/4) very gravelly loam, brown (7.5YR 54/4) moist; moderate medium subangular blocky structure, and moderate medium

subangular blocky structure; moderately hard, friable, slightly sticky, slightly plastic; common very fine, common fine, few medium, and few coarse roots throughout; 60 percent patchy distinct clay films on all faces of peds; 35 percent gravel, 15 percent cobbles, and 1 percent stones; noneffervescent; neutral, pH 7.2; gradual smooth boundary.

Range in Characteristics

Soil moisture: typic ustic
Mean annual soil temperature: 44 to 47 degrees F
Surface fragments: 5 to 50 percent

Particle-size control section (weighted average):
Clay content: 10 to 18 percent
Rock fragment content: 35 to 90 percent, dominantly gravel and cobble

A horizon:
Hue: 7.5YR to 10YR
Value: 3 or 4 dry; 2 to 4 moist
Chroma: 2 or 3
Texture, fine earth fraction: sandy loam or loam
Clay content: 5 to 15 percent
Fragments: 35 to 60 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.3

Bt horizon:
Hue: 7.5YR to 10YR
Value: 4 or 5 dry; 3 or 4 moist
Chroma: 4 to 6
Texture, fine earth fraction: sandy loam or loam
Clay content: 10 to 27 percent
Fragments: 35 to 60 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: slightly acid to neutral pH 6.1 to 7.3

Tragmon Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: canyon
Parent material: slope alluvium and alluvium derived from sandstone and shale
Elevation: 7,100 to 8,500 feet
Slope: 6 to 35 percent

Climatic data:
Mean annual precipitation: 15 to 20 inches
Mean annual air temperature: 43 to 47 degrees F
Frost-free period: 80 to 100 days

Taxonomic class: Fine-loamy, mixed, superactive, frigid Typic Argiustolls

Typical Pedon

Tragmon sandy loam in an area of Tragmon-Sheek complex, 12 to 25 percent slopes, from the adjoining Cortez Area Soil Survey, 37 degrees 14 minutes 45 seconds north latitude and 108 degrees 30 minutes 27 seconds. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 5 percent gravel.

A1—0 to 2 inches; brown (10YR 5/3) sandy loam; dark brown (10YR 3/3) moist; single grain, loose, loose, nonsticky, nonplastic; many very fine roots throughout; 3 percent gravel; neutral (pH 7.2); abrupt smooth boundary.

A2—2 to 5 inches; brown (10YR 5/3) sandy loam; dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common very fine roots throughout; few very fine vertical discontinuous tubular pores; 3 percent gravel; neutral (pH 7.2); clear smooth boundary.

A3—5 to 11 inches; brown (10YR 5/3) loam; dark brown (10YR 3/3) moist; weak medium subangular blocky structure; slightly hard, very friable, nonsticky, nonplastic; common very fine roots throughout; few very fine vertical discontinuous tubular pores; 3 percent gravel and 1 percent cobbles; neutral (pH 7.2); clear smooth boundary.

Bt1—11 to 36 inches; pale brown (10YR 6/3) loam; dark brown (10YR 3/3) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky, slightly plastic; common very fine roots throughout; few very fine and few fine discontinuous tubular pores; common faint clay films on faces of peds and in pores; 3 percent gravel; neutral (pH 7.2); clear smooth boundary.

Bt2—36 to 40 inches; yellowish brown (10YR 5/4) loam; brown (10YR 4/3) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky, slightly plastic; 3 percent gravel; neutral (pH 7.2); gradual smooth boundary.

C1—40 to 48 inches; light yellowish brown (10YR 6/4) loam; dark yellowish brown (10YR 4/4) moist; massive; hard firm, slightly sticky, slightly plastic; 7 percent gravel; neutral (pH 7.2); clear smooth boundary.

C2—48 to 60 inches; light yellowish brown (10YR 6/4) loam; dark yellowish brown (10YR 4/4) moist; massive; hard firm, slightly sticky, slightly plastic; 7 percent gravel; slightly effervescent; slightly alkaline (pH 7.8).

Range in Characteristics

Soil moisture: typic ustic
Mean annual soil temperature: 45 to 48 degrees F
Thickness of mollic epipedon: 7 to 16 inches
Surface fragments: 0 to 15 percent

Particle-size control section (weighted average):
- *Clay content:* 18 to 35 percent
- *Rock fragment content:* 0 to 20 percent

A horizon:
- *Hue:* 10YR
- *Value:* 3 to 5 dry; 2 or 3 moist
- *Chroma:* 2 to 3
- *Texture, fine earth fraction:* sandy loam or loam
- *Clay content:* 10 to 27 percent
- *Fragments:* 0 to 20 percent
- *Calcium carbonate equivalent:* 0 percent

Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.8

Bt horizon:
Hue: 7.5YR to 10YR
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 2 to 6
Texture, fine earth fraction: loam, sandy clay loam or clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 20 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 8.4

C horizon:
Hue: 7.5YR to 10YR
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 2 to 6
Texture, fine earth fraction: clay loam, sandy clay loam or loam
Clay content: 18 to 35 percent
Fragments: 0 to 30 percent
Calcium carbonate equivalent: 0 to 1 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 8.4

Tupuyci Series

Depth class: very deep
Drainage class: somewhat excessively
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: flood plains
Parent material: alluvium derived from mixed sources
Elevation: 4,800 to 5,700 feet
Slope: 1 to 3 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Loamy-skeletal, mixed, active, calcareous, mesic Typic Torrifluvents

Typical Pedon

Tupuyci gravelly sand, in an area of Tupuyci-Ives complex, 1 to 3 percent slopes, USGS Mariano Wash West topographic quadrangle; 37 degrees 11 minutes 24.69 seconds north latitude, 108 degrees 54 minutes 44.08 seconds west latitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 4 percent gravel, 1 percent cobbles, 1 percent stones.

A—0 to 2 inches, brown (7.5YR 5/4), gravelly sand, brown (7.5YR 4/4), moist; weak fine platy structure; friable, soft, nonsticky, nonplastic; common fine roots throughout; 15 percent gravel, 2 percent cobbles, and 1 percent stones; strongly effervescent; moderately alkaline, pH 8.0; clear smooth boundary.

C1—2 to 10 inches, brown (10YR 5/3), stratified stony sandy loam, brown (10YR 4/3), moist; massive; very friable, soft, nonsticky, nonplastic; common fine and common medium roots throughout; common fine, common medium, and common coarse tubular pores; 10 percent gravel, 10 percent cobbles, and 10 percent stones; strongly effervescent; moderately alkaline, pH 8.1; clear smooth boundary.

C2—10 to 74 inches, grayish brown (10YR 5/2), stratified extremely stony sandy loam to sandy loam, dark grayish brown (10YR 4/2), moist; massive; very friable, soft, nonsticky, nonplastic; common fine roots throughout; common fine and common medium tubular pores; 40 percent gravel, 20 percent cobbles, 10 percent stones, and 1 percent boulders; strongly effervescent; moderately alkaline, pH 8.1; gradual wavy boundary.

Cz—74 to 96 inches, grayish brown (10YR 5/2), stratified extremely stony sandy loam, dark grayish brown (10YR 4/2), moist; massive; very friable, soft, nonsticky, nonplastic; common fine roots throughout; 2 percent medium irregular salt masses on faces of peds; 40 percent gravel, 20 percent cobbles, 10 percent stones and 1 percent boulders; strongly effervescent; moderately alkaline, pH 8.4.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to salt accumulation: 3 to 80 inches
Surface fragments: 0 to 15 percent

Particle-size control section (weighted average):
Clay content: 5 to 18 percent
Rock fragment content: 35 to 75 percent

A horizon:
Hue: 7.5YR to 2.5Y
Value: 4 to 6 dry or moist
Chroma: 2 to 4
Texture, fine earth fraction: sand, fine sandy loam or sandy loam
Clay content: 2 to 15 percent
Fragments: 2 to 20 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 2 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

C horizon:
Hue: 7.5YR to 2.5Y
Value: 4 to 6 dry or moist
Chroma: 2 to 4
Texture, fine earth fraction: stratified loamy fine sand to sandy loam
Clay content: 2 to 18 percent
Fragments: 0 to 75 percent
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 0 to 1 percent
Electrical conductivity: 2 to 8 mmhos/cm

Sodium adsorption ratio: 0 to 10
Reaction: pH 7.9 to 9.0

Typic Torriorthents

Depth class: very shallow to very deep
Drainage class: well
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: terraces, escarpments, hills, mesas, canyons, alluvial fans
Parent material: colluvium, alluvium, residuum derived from mixed sources
Elevation: 4,800 to 5,700 feet
Slope: 3 to 65 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Typic Torriorthents

Reference Pedon

Typic Torriothents, in an area of Typic Torriothents-Rock outcrop complex, 12 to 80 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Bowdish Canyon topographic quadrangle; 37 degrees 17 minutes 37 seconds north latitude and 108 degrees 58 minutes 31 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 40 percent gravel, 10 percent cobbles, 15 percent stones.

A—0 to 3 inches; brown (7.5YR 5/4) extremely stony sandy loam, brown (7.5YR 4/4) moist; weak medium granular structure parting to single grain; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; strongly effervescent; 40 percent gravel, 5 percent cobbles, and 20 percent stones; slightly alkaline (pH 7.5); clear wavy boundary.
AC—3 to 7 inches; light brown (7.5YR 6/4) very stony clay loam, brown (7.5YR 5/3) moist; weak medium subangular blocky structure parting to moderate medium granular; soft, very friable, slightly sticky, slightly plastic; many very fine and fine roots; strongly effervescent; 30 percent gravel, 5 percent cobbles, and 20 percent stones; moderately alkaline (pH 8.2); clear wavy boundary.
2C—7 to 16 inches; light gray (2.5Y 7/2) very stony silty clay loam, light brownish gray (2.5Y 6/2) moist; massive; soft, very friable, slightly sticky, slightly plastic; common fine and very fine roots; strongly effervescent; disseminated calcium carbonate; 30 percent gravel, 5 percent cobbles, and 20 percent stones; moderately alkaline (pH 8.2); abrupt wavy boundary.
Cr—16 inches; soft, weathered, calcareous mudstone.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to restrictive feature: 10 to more than 60 inches

Particle-size control section (weighted average):
Clay content: 10 to 35 percent
Rock fragment content: 0 to 60 percent

A horizon:
Hue: 7.5 YR to 2.5Y

Value: 4 to 6 dry; 3 to 5 moist
Chroma: 2 to 6
Clay content: 10 to 20 percent
Fragments: 0 to 60 percent
Calcium carbonate equivalent: 1 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 9.0

C horizon:
Hue: 10YR to 2.5Y
Value: 4 to 7 dry; 3 to 7 moist
Chroma: 2 to 6
Clay content: 10 to 35 percent
Fragments: 0 to 60 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 to 2 percent
Electrical conductivity: 0 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 10
Reaction: pH 7.9 to 9.0

Ustic Torrifluvents

Depth class: very deep
Drainage class: somewhat excessively
Slowest permeability: 2 to 6 in/hr (moderately rapid)
Landform: drainageways, flood plains
Parent material: alluvium derived from mixed sources
Elevation: 5,400 to 6,200 feet
Slope: 0 to 3 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Ustic Torrifluvents

Reference Pedon

Ustic Torrifluvents, 0 to 3 percent slopes; USGS Woods Canyon topographic quadrangle; 37 degrees 26 minutes 21 seconds north latitude and 108 degrees 46 minutes 33 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 2 percent gravel.

A—0 to 3 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 5/3) moist; weak medium granular structure; soft, loose, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.
C1—3 to 11 inches; pale brown (10YR 6/3) fine sandy loam, brown (10YR 5/3) moist; single grain; loose nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.
C2—11 to 27 inches; brown (10YR 5/3) stratified very gravelly sandy loam, brown (10YR 4/3) moist; single grain; loose nonsticky, nonplastic; slightly effervescent; moderately alkaline (8.0); abrupt smooth boundary.

C3—27 to 38 inches; pale brown (10YR 6/3) loamy sand, brown (10YR 5/3) moist; massive; soft, very friable, nonsticky, nonplastic; slightly effervescent; moderately alkaline (pH 8.2); abrupt smooth boundary.
C4—38 to 60 inches; brown (10YR 5/3) sandy loam, dark brown (10YR 3/3) moist; massive; soft, very friable, nonsticky, nonplastic; moderately alkaline (pH 8.0).

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 10 to 35 percent
Rock fragment content: 0 to 60 percent

A horizon:
Hue: 10YR
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 2 to 6
Clay content: 0 to 15 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 2 to 8 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 8.4

C horizon:
Hue: 10YR
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 2 to 6
Texture, fine earth fraction: loamy sand, sandy loam, loam and clay loam
Clay content: 10 to 35 percent
Fragments: 0 to 60 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 8 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 8.4

Ustic Torriorthents

Depth class: very deep
Drainage class: well or somewhat excessively
Slowest permeability: 0.2 to 2 in/hr (moderately slow)
Landform: alluvial fans, escarpments, drainageways, terraces, flood plains
Parent material: alluvium derived from sandstone and shale
Elevation: 5,400 to 6,200 feet
Slope: 1 to 60 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Ustic Torriorthents

Reference Pedon

Ustic Torriorthents, in an area of Ustic Torriothents-Gullied land complex, 1 to 60 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Cortez topographic quadrangle; 37 degrees 18 minutes 18 seconds north latitude and 108 degrees 34 minutes 36 west longitude. NAD 27 (colors for dry soil unless otherwise noted).

Surface fragments: none.

A1—0 to 1 inch; brown (10YR 4/3) fine sandy loam, dark brown (10YR 3/3) moist; weak fine platy structure; soft, very friable, nonsticky, nonplastic; common very fine and fine roots; slightly effervescent; slightly alkaline (pH 7.8); clear smooth boundary.

A2—1 inch to 7 inches; brown (10YR 5/3) sandy loam, brown (10YR 4/3) moist; weak fine platy structure; soft, very friable, nonsticky, nonplastic; many very fine and fine roots; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.

C—7 to 60 inches; pale brown (10YR 6/3) sandy loam, brown (10YR 4/3) moist; weak fine platy structure; slightly hard, friable, slightly sticky, slightly plastic; few fine and very fine roots; violently effervescent; 5 percent gravel; moderately alkaline (pH 8.2).

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Depth to restrictive feature: more than 60 inches
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
- *Clay content:* 8 to 35 percent
- *Rock fragment content:* 0 to 15 percent

A horizon:
- *Hue:* 7.5YR to 2.5Y
- *Value:* 4 to 7 dry; 3 to 7 moist
- *Chroma:* 2 to 6
- *Clay content:* 8 to 20 percent
- *Fragments:* 0 to 15 percent
- *Calcium carbonate equivalent:* 0 to 10 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 to 2 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 7.4 to 8.4

C horizon:
- *Hue:* 7.5YR to 2.5Y
- *Value:* 4 to 7 dry; 3 to 7 moist
- *Chroma:* 2 to 6
- *Texture, fine earth fraction:* stratified sandy loam to clay loam
- *Clay content:* 8 to 35 percent
- *Fragments:* 0 to 15 percent
- *Calcium carbonate equivalent:* 1 to 5 percent
- *Gypsum content:* 0 to 5 percent
- *Electrical conductivity:* 0 to 2 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 7.4 to 8.4

Uzacol Series

Depth class: deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: hills
Parent material: slope alluvium derived from shale
Elevation: 4,800 to 5,700 feet
Slope: 3 to 9 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine, smectitic, mesic Vertic Natrargids

Typical Pedon

Uzacol clay loam in an area of Uzacol-Zwicker-Claysprings complex, 3 to 12 percent slopes; USGS Mariano Wash East topographic quadrangle; 37 degrees 11 minutes 53 seconds north latitude and 108 degrees 51 minutes 50 seconds west longitude NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 10 percent gravel, 1 percent cobbles and stones

A1—0 to 2 inches; light brown (2.5YR 6/4) clay loam, brown (7.5YR 5/3) moist; weak fine granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine roots throughout; 5 percent gravel; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

A2—2 to 4 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 5/4) moist; weak medium subangular blocky structure and weak fine granular structure; moderately hard, very friable, moderately sticky, moderately plastic; common very fine roots throughout; common very fine dendritic tubular pores; 3 percent gravel; strongly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Btn1—4 to 14 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 5/4) moist; strong coarse columnar structure and moderate medium angular blocky structure; very hard, firm, moderately sticky, moderately plastic; common very fine and common fine roots throughout; common very fine dendritic tubular pores; 100 percent continuous distinct clay films on faces of peds; 2 percent gravel; violently effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Btn2—14 to 34 inches; light brown (7.5YR 6/4) clay, brown (7.5YR 5/4) moist; strong coarse columnar structure and moderate medium angular blocky structure; very hard, firm, moderately sticky, moderately plastic; common very fine and common fine roots throughout; common very fine dendritic tubular pores; 100 percent continuous distinct clay films on faces of peds; 1 percent gravel; violently effervescent; strongly alkaline (pH 8.8); abrupt smooth boundary.

Bkn—34 to 44 inches; very pale brown (10YR 7/3) clay loam, pale brown (10YR 6/3) moist; moderate medium angular blocky structure; moderately hard, friable, moderately sticky, moderately plastic; few very fine dendritic tubular pores; 15 percent patchy faint clay films on faces of peds; 50 percent fine irregular carbonate masses; 10 percent gravel; violently effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

Cr—44 inches; Morrison shale.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 52 to 59 degrees F
Depth to restrictive feature: 40 to 60 inches to bedrock (paralithic)
Depth to gypsiferous material: 40 to 60 inches
Surface rock fragments: 5 to 20 percent gravel

Particle-size control section (weighted average):
- *Clay content:* 35 to 60 percent
- *Rock fragment content:* 0 to 15 percent

A horizon:
- *Hue:* 5YR to 7.5YR
- *Value:* 5 or 6 dry; 4 or 5 moist
- *Chroma:* 3 to 4
- *Texture, fine earth fraction:* clay loam
- *Clay content:* 27 to 35 percent
- *Fragments:* 0 to 20 percent
- *Calcium carbonate equivalent:* 1 to 5 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 2 to 4 mmhos/cm
- *Sodium adsorption ratio:* 0 to 10
- *Reaction:* moderately alkaline pH 7.4 to 8.4

B horizon:
- *Hue:* 5YR to 7.5YR
- *Value:* 5 to 7 dry; 5 or 6 moist
- *Chroma:* 3 to 6
- *Texture, fine earth fraction:* clay loam, silty clay loam or clay
- *Clay content:* 35 to 60 percent
- *Fragments:* 0 to 15 percent
- *Calcium carbonate equivalent:* 1 to 15 percent
- *Gypsum content:* 0 to 15 percent
- *Electrical conductivity:* 4 to 16 mmhos/cm
- *Sodium adsorption ratio:* 15 to 50
- *Reaction:* moderately or strongly alkaline pH 7.9 to 9.0

Uzona Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.0 to 0.001 in/hr (impermeable)
Landform: pediments
Parent material: residuum and slope alluvium derived from shale
Elevation: 4,800 to 5,700 feet
Slope: 1 to 6 percent

Climatic data:
- *Mean annual precipitation:* 7 to 10 inches
- *Mean annual air temperature:* 52 to 56 degrees F
- *Frost-free period:* 135 to 160 days

Taxonomic class: Fine, smectitic, mesic Typic Haplosalids

Typical Pedon

Uzona loam, 1 to 6 percent slopes; USGS Sentinel Peak Southwest topographic quadrangle; 37 degrees 7 minutes 24 seconds north latitude and 108 degrees 59 minutes 24 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 2 percent gravel.

A—0 to 2 inches; light yellowish brown (10YR 6/4) loam, dark yellowish brown (10YR 4/4) moist; moderate very fine granular structure; soft, very friable, slightly sticky, slightly plastic; many very fine and few very fine roots throughout; 1 percent gravel; violently effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

Btn1—2 to 14 inches; light yellowish brown (10YR 6/4) clay, yellowish brown (10YR 5/4) moist; moderate very coarse prismatic structure and moderate medium subangular blocky structure; moderately hard, firm, moderately sticky, very plastic; few fine and many very fine roots throughout; common very fine dendritic tubular pores; 30 percent discontinuous prominent clay films throughout; 3 percent fine irregular gypsum masses and 1 percent fine irregular gypsum crystals; violently effervescent; strongly alkaline (pH 8.6); clear smooth boundary.

Btn2—14 to 22 inches; light yellowish brown (10YR 6/4) clay, yellowish brown (10YR 5/4) moist; weak very coarse prismatic structure and moderate medium subangular blocky structure; moderately hard, firm, very sticky, very plastic; common very fine roots throughout; common very fine dendritic tubular pores; 15 percent discontinuous prominent clay films throughout; 10 percent fine irregular gypsum masses and 2 percent fine irregular gypsum crystals; violently effervescent; strongly alkaline (pH 8.8); gradual smooth boundary.

Bz1—22 to 33 inches; light yellowish brown (10YR 6/4) clay, yellowish brown (10YR 5/4) moist; massive; hard, friable, very sticky, very plastic; few fine and few very fine roots throughout; 2 percent fine irregular gypsum crystals and 4 percent fine irregular salt crystals; violently effervescent; strongly alkaline (pH 8.8); gradual smooth boundary.

Bz2—33 to 55 inches; light yellowish brown (10YR 6/4), clay, yellowish brown (10YR 5/4) moist; massive; hard, friable, very sticky, very plastic; few fine roots throughout; 1 percent fine irregular gypsum crystals; 1 percent fine irregular salt crystals; violently effervescent; strongly alkaline (pH 8.8); clear wavy boundary.

Bz3—55 to 77 inches; yellowish brown (10YR 5/4) clay, yellowish brown (10YR 5/4) moist; massive; hard, friable, very sticky, very plastic; few fine roots throughout; 2 percent fine irregular gypsum crystals; 1 percent fine irregular salt crystals; violently effervescent; strongly alkaline (pH 8.8).

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 52 to 59 degrees F
Depth to natric horizon: 18 to 55 inches
Surface fragments: 0 to 15 percent

Particle-size control section (weighted average):
- *Clay content:* 35 to 65 percent
- *Rock fragment content:* 0 to 5 percent

A horizon:
- *Hue:* 5YR to 10YR
- *Value:* 5 to 7 dry; 3 to 6 moist
- *Chroma:* 3 to 4
- *Texture, fine earth fraction:* loam

Clay content: 20 to 27 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Btn horizon:
Hue: 5YR to 10YR
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 3 to 4
Texture, fine earth fraction: clay
Clay content: 40 to 50 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 2 to 8 mmhos/cm
Sodium adsorption ratio: 15 to 30
Reaction: pH 8.5 to 9.0

Bz horizon:
Hue: 5YR to 10YR
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 3 to 4
Texture, fine earth fraction: silty clay or clay
Clay content: 40 to 70 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 to 5 percent
Electrical conductivity: 10 to 50 mmhos/cm
Sodium adsorption ratio: 30 to 60
Reaction: pH 8.5 to 9.0

Vessilla Series

Depth class: very shallow to shallow
Drainage class: well
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Landform: mesa, cuestas, structural benches
Parent material: eolian material and slope alluvium derived from sandstone
Elevation: 6,200 to 7,400 feet
Slope: 5 to 25 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Loamy, mixed, active, calcareous, mesic Aridic Lithic Ustorthents

Typical Pedon

Vessilla channery fine sandy loam, in an area of Vessilla-Rock outcrop complex, 5 to 25 percent slopes; USGS Palmer Mesa, New Mexico topographic quadrangle; 36 degrees 59 minutes 44 seconds north latitude and 108 degrees 32 minutes 16 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 20 percent channers, 5 percent cobbles, 5 percent stones.

A—0 to 3 inches; light brown (7.5YR 6/4) channery fine sandy loam, brown (7.5YR 4/4) moist; moderate very thick platy structure parting to weak fine granular; soft, very friable, slightly sticky, nonplastic; few coarse and very fine roots; few very fine vesicular pores; and 5 percent gravel, 10 percent channers, and 5 percent flagstones; slightly effervescent; moderately alkaline; clear smooth boundary.

C—3 to 8 inches; light brown (7.5YR 6/4) parachannery fine sandy loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky, nonplastic; common medium and very fine roots; 5 percent sandstone parachanners; 5 percent gravel and 5 percent channers; strongly effervescent, secondary calcium carbonates segregated as very few fine irregularly shaped accumulations on rock fragments and sand grains; moderately alkaline; abrupt wavy boundary.

R—8 inches; sandstone bedrock.

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 52 to 54 degrees F
Depth to restrictive feature: 4 to 20 inches to bedrock (lithic)
Surface fragments: 15 to 60 percent

Particle-size control section (weighted average):
Clay content: 12 to 20 percent
Rock fragment content: 0 to 35 percent

A horizon:
Hue: 7.5YR to 10YR
Value: 5 or 6 dry, 4 to 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: fine sandy loam
Clay content: 10 to 16 percent
Fragments: 15 to 25 percent
Calcium carbonate equivalent: 3 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 1 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.4 to 8.4

C horizon:
Hue: 7.5YR to 10YR
Value: 4 to 6 dry or moist
Chroma: 2 to 4
Texture, fine earth fraction: fine sandy loam
Clay content: 12 to 18 percent
Fragments: 5 to 20 percent
Calcium carbonate equivalent: 5 to 20 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 1 mmhos/cm
Sodium adsorption ratio: 0 to 1
Reaction: pH 7.4 to 8.4

Vosburg Series

Depth class: very deep
Drainage class: well

Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: drainageways, canyons
Parent material: alluvium derived from sandstone and shale
Elevation: 6,200 to 7,400 feet
Slope: 3 to 8 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Fine-loamy, mixed, superactive, mesic Pachic Argiustolls

Typical Pedon

Vosburg fine sandy loam, 3 to 8 percent slopes, from the adjoining La Plata Soil Survey Area; USGS Mormon Reservoir topographic quadrangle; 37 degrees 11 minutes 02 seconds north latitude and 108 degrees 08 minutes 40.20 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 15 inches; dark grayish brown (10YR 4/2) fine sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; loose, very friable, slightly sticky, nonplastic; neutral (pH 7.2); clear smooth boundary.
BA—15 to 18 inches; dark grayish brown (10YR 4/2) clay loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure parting to weak medium granular; slightly hard, friable, moderately sticky, moderately plastic; slightly alkaline (pH 7.4); clear smooth boundary.
Bt—18 to 31 inches; dark grayish brown (10YR 4/2) sandy clay loam, very dark grayish brown (10YR 3/2) moist; moderate medium subangular blocky structure parting to moderate medium granular; hard, friable, moderately sticky, moderately plastic; many prominent clay films on faces of peds; slightly alkaline (pH 7.6); gradual smooth boundary.
Bk1—31 to 50 inches; brown (10YR 5/3) sandy clay loam, dark brown (10YR 4/3) moist; moderate medium subangular blocky structure parting to moderate fine subangular blocky; hard, friable, moderately sticky, moderately plastic; strongly effervescent; few irregular masses of calcium carbonate; slightly alkaline (pH 7.8); gradual smooth boundary.
Bk2—50 to 60 inches; brown (10YR 5/3) sandy clay loam, dark brown (10YR 4/3) moist; massive; hard, friable, moderately sticky, moderately plastic; violently effervescent; common irregular masses of calcium carbonate; slightly alkaline (pH 7.8).

Range in Characteristics

Soil moisture: typic ustic
Mean annual soil temperature: 48 to 52 degrees F
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 10YR to 7.5YR
Value: 3 to 5 dry; 2 to 6 moist
Chroma: 1 to 3
Texture, fine earth fraction: fine sandy loam

Clay content: 8 to 20 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.8

Bt horizon:
Hue: 7.5YR to 10YR
Value: 3 to 6 dry; 2 to 5 moist
Chroma: 1 to 4
Texture, fine earth fraction: sandy clay loam, clay loam or loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 8.4

Bk horizon:
Hue: 7.5YR to 10YR
Value: 3 to 6 dry; 2 to 5 moist
Chroma: 3 to 6
Texture, fine earth fraction: sandy clay loam, clay loam or loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 1 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 8.4

Walrees Series

Depth class: very deep
Drainage class: somewhat poorly
Slowest permeability: 0.2 to 0.6 in/hr (moderately slow)
Landform: flood plains
Parent material: alluvium derived from mixed sources
Elevation: 4,600 to 5,700 feet
Slope: 0 to 1 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, calcareous, mesic Oxyaquic Ustifluvents

Typical Pedon

Walrees fine sandy loam in an area of Bebeevar-Walrees complex, 0 to 2 percent slopes; from the adjoining Shiprock Soil Survey Area, USGS Shiprock topographic quadrangle; 36 degrees 46 minutes 16 seconds north latitude, 108 degrees 37

minutes 39 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 4 inches; pale brown (10YR 6/3) fine sandy loam, dark grayish brown (10YR 4/2) moist; few fine faint dark yellowish brown (10YR 4/4) redox concentrations; weak medium platy structure parting to weak fine granular; soft, very friable, slightly sticky, nonplastic; common very fine and common fine roots throughout; few very fine irregularly shaped pores; few lenses of loamy fine sand; slightly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

C1—4 to 12 inches; pale brown (10YR 6/3) loam, brown (10YR 4/3) moist; few fine distinct dark yellowish brown (10YR 4/6) redox concentrations; weak coarse subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; few very fine, common medium, and few coarse roots throughout; few fine tubular, and few very fine irregularly shaped pores; strongly effervescent; moderately alkaline (pH 8.0); clear wavy boundary.

C2—12 to 17 inches; pale brown (10YR 6/3) loamy fine sand, brown (10YR 5/3) moist; few fine distinct dark yellowish brown (10YR 4/6) redox concentrations; massive; soft, very friable, nonsticky, nonplastic; few very fine, common fine, and few coarse roots throughout; common very fine tubular pores; few lenses of silt loam; slightly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

C3—17 to 23 inches; light brownish gray (10YR 6/2) fine sandy loam, grayish brown (10YR 5/2) moist; common fine distinct dark yellowish brown (10YR 4/6) and few fine prominent strong brown (7.5YR 4/6) redox concentrations; massive; soft, very friable, slightly sticky, nonplastic; few very fine, common fine, and few coarse roots throughout; common very fine tubular pores; few lenses of silt loam; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

C4—23 to 30 inches; light brownish gray (10YR 6/2) silt loam, grayish brown (10YR 5/2) moist; common medium distinct dark yellowish brown (10YR 4/6) and few fine prominent strong brown (7.5YR 4/6) redox concentrations; massive; slightly hard, friable, slightly sticky, slightly plastic; few very fine, common fine, and few medium roots throughout; few very fine tubular pores; few thin strata of silty clay loam containing few fine faint dark gray (10YR 4/1) redox depletions; strongly effervescent; moderately alkaline (pH 8.2); clear wavy boundary.

2C—30 to 62 inches; light brownish gray (10YR 6/2) stratified very gravelly coarse sand and sand, dark grayish brown (10YR 4/2) moist; few fine faint dark yellowish brown (10YR 4/4) redox concentrations; single grain; loose, nonsticky, nonplastic; few fine and few medium roots throughout; 40 percent gravel, 5 percent cobbles, and 5 percent stones; very slightly effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 54 to 58 degrees F
Surface fragments: 0 to 15 percent
Seasonal high water table: January to December, 24 to 42 inches

Particle-size control section (weighted average):
Clay content: unspecified percent
Rock fragment content: unspecified percent

A horizon:
Hue: 10YR
Value: 5 or 6 dry, 4 or 5 moist
Chroma: 2 or 3
Texture, fine earth fraction: fine sandy loam

Clay content: 15 to 18 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 1 to 3 percent
Gypsum content: 0 percent
Electrical conductivity: 4 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

C horizon:
Hue: 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 or 3
Texture, fine earth fraction: stratified loamy fine sand to silty clay loam
Clay content: 18 to 27 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 2 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 4 to 8 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

2C horizon:
Hue: 10YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 2 or 3
Texture, fine earth fraction: stratified very gravelly coarse sand to sand
Clay content: 0 to 5 percent
Fragments: 5 to 65 percent
Calcium carbonate equivalent: 0 to 1 percent
Gypsum content: 0 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.9 to 8.4

Wauquie Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: alluvial fans, canyons
Parent material: colluvium and slope alluvium derived from sandstone and shale
Elevation: 6,200 to 7,400 feet
Slope: 6 to 55 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Aridic Haplustalfs

Typical Pedon

Wauquie stony fine sandy loam in an area of Wauquie-Dolcan-Rock outcrop complex, 25 to 80 percent slopes from the adjoining Cortez Soil Survey Area; USGS Secret Canyon topographic quadrangle; 37 degrees 47 minutes 47 seconds and 108

degrees 50 minutes 18 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise indicated).

Surface fragments: 15 percent gravel, 20 percent cobbles, 15 percent stones.

A1—0 to 2 inches; brown (7.5YR 4/3) stony fine sandy loam, dark brown (7.5YR 3/3) moist; weak fine granular structure; loose, very friable, nonsticky, nonplastic; 15 percent gravel, 8 percent cobbles, 5 percent stones, and 2 percent boulders; neutral (pH 7.2); abrupt smooth boundary.

A2—2 to 6 inches; brown (7.5YR 4/4) very cobbly loam, brown (7.5YR 4/4) moist; weak fine granular structure; soft, friable, slightly sticky, slightly plastic; common medium roots throughout; very slightly effervescent; 20 percent gravel, 15 percent cobbles, 10 percent stones, and 2 percent boulders; slightly alkaline (pH 7.4); clear smooth boundary.

Bt1—6 to 11 inches; brown (7.5YR 5/4) very cobbly loam, dark brown (7.5YR 3/4) moist; weak medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and medium roots throughout; common fine tubular pores; common distinct discontinuous clay films on faces of peds; slightly effervescent; 20 percent gravel, 15 percent cobbles, 10 percent stones, and 2 percent boulders; slightly alkaline (pH 7.4); gradual smooth boundary.

Bt2—11 to 22 inches; brown (7.5YR 5/4) very cobbly loam, brown (7.5YR 3/4) moist; weak medium subangular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and medium roots throughout; common fine tubular pores; common distinct discontinuous clay films on faces of peds and in pores; common fine irregular soft masses of carbonate; strongly effervescent; 20 percent gravel, 20 percent cobbles, 15 percent stones, and 2 percent boulders; slightly alkaline (pH 7.6); gradual wavy boundary.

Bk1—22 to 31 inches; brown (7.5YR 5/4) very cobbly loam, brown (7.5YR 4/4) moist; massive; slightly hard, friable, moderately sticky, moderately plastic; common medium, very fine, and coarse roots throughout; common fine tubular pores; common fine irregular soft masses of carbonate; strongly effervescent; 20 percent gravel, 20 percent cobbles, 15 percent stones, and 2 percent boulders; slightly alkaline (pH 7.6); gradual wavy boundary.

Bk2—31 to 60 inches; brown (7.5YR 5/4) very cobbly loam, brown (7.5YR 4/4) moist; massive; slightly hard, friable, moderately sticky, moderately plastic; common very fine, medium, coarse roots throughout; common fine tubular pores; strongly effervescent; 20 percent gravel, 20 percent cobbles, 15 percent stones, and 2 percent boulders; slightly alkaline (pH 7.8).

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 48 to 52 degrees F
Surface fragments: 15 to 60 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 35-60 percent

A horizon:
Hue: 10YR or 7.5YR
Value: 3 to 5 dry; 2 to 4 moist
Chroma: 2 to 4
Texture, fine earth fraction: fine sandy loam or loam
Clay content: 10 to 27 percent

Fragments: 15 to 60 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 7.8

Bt horizon:
Hue: 7.5YR
Value: 3 to 5 dry; 2 to 4 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam, loam or sandy loam
Clay content: 18 to 35 percent
Fragments: 15 to 60 percent
Calcium carbonate equivalent: 0 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Bk horizon (if present):
Hue: 7.5YR
Value: 5 to 7 dry; 4 to 6 moist
Chroma: 4 to 6
Texture, fine earth fraction: loam or clay loam
Clay content: 20 to 35 percent
Fragments: 15 to 60 percent
Calcium carbonate equivalent: 1 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Wetherill Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.6 to 2.0 in/hr (moderate)
Landform: mesas, paleoterraces, fan remnants
Parent material: eolian deposits derived from sandstone
Elevation: 6,200 to 7,400 feet
Slope: 1 to 15 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Fine-silty, mixed, superactive, mesic Aridic Haplustalfs

Typical Pedon

Wetherill silt loam, 1 to 3 percent slopes; USGS Moqui Canyon topographic quadrangle; 37 degrees 0 minutes 17.55 seconds north latitude and 108 degrees 30 minutes 38.31 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A1—0 to 2 inches; reddish brown (5YR 5/3) silt loam, reddish brown (5YR 4/3) moist; moderate fine granular structure; soft, very friable, slightly sticky, slightly plastic; common very fine roots throughout; very slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

A2—2 to 9 inches; reddish brown (5YR 5/4) silt loam, reddish brown (5YR 4/4) moist; moderate thin platy structure, and weak fine granular structure; soft, friable, slightly sticky, slightly plastic; common very fine and common medium roots throughout; many very fine dendritic tubular pores; very slightly effervescent; moderately alkaline (pH 8.0); abrupt smooth boundary.

Bt—9 to 21 inches; reddish brown (5YR 5/4) silt loam, reddish brown (5YR 4/4) moist; moderate medium angular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine and common medium roots throughout; common very fine dendritic tubular pores; 5 percent faint pressure faces throughout; very slightly effervescent; moderately alkaline (pH 8.0); gradual smooth boundary.

Btk1—21 to 32 inches; reddish brown (5YR 5/4) silt loam, reddish brown (5YR 4/4) moist; strong medium angular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine and common medium roots throughout; common very fine dendritic tubular pores; 40 percent distinct pressure faces throughout; 4 percent fine distinct irregular carbonate masses on faces of peds; slightly effervescent; moderately alkaline (pH 8.2); clear smooth boundary.

Btk2—32 to 43 inches; reddish brown (5YR 5/4) interior and pinkish white (5YR 8/2) silt loam, reddish brown (5YR 4/4) interior and pinkish gray (5YR 7/2), moist; strong medium angular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine roots throughout; common very fine dendritic tubular pores; 90 percent distinct pressure faces throughout; 50 percent coarse prominent irregular carbonate masses on faces of peds; strongly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.

Bk1—43 to 59 inches; pinkish white (5YR 8/2) silt loam, pinkish gray (5YR 7/2) moist; moderate medium angular blocky structure; hard, friable, moderately sticky, moderately plastic; common very fine roots throughout; common very fine dendritic tubular pores; 15 percent faint pressure faces throughout; 95 percent coarse distinct irregular carbonate masses throughout; violently effervescent; moderately alkaline (pH 8.4); gradual smooth boundary.

Bk2—59 to 74 inches; pinkish white (5YR 8/2) silt loam, pinkish gray (5YR 7/2) moist; moderate medium angular blocky structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine roots throughout; common very fine dendritic tubular pores; 100 percent carbonate masses throughout; violently effervescent; moderately alkaline (pH 8.4); gradual smooth boundary.

Bk3—74 to 80 inches; pinkish gray (5YR 6/2) silt loam, light reddish brown (5YR 6/4) moist; slightly hard, friable, moderately sticky, moderately plastic; common very fine roots throughout; common very fine dendritic tubular pores; 15 percent medium distinct irregular carbonate masses lining pores; violently effervescent; moderately alkaline (pH 8.2).

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 48 to 52 degrees F
Depth to calcic horizon: more than 40 inches
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
Clay content: 20 to 35 percent

Rock fragment content: 0 to 3 percent

A horizon:
Hue: 5YR to 7.5YR
Value: 4 or 5 dry; 3 or 4 moist
Chroma: 3 to 6
Texture, fine earth fraction: silt loam, loam or very fine sandy loam
Clay content: 10 to 27 percent
Fragments: 0 to 5 percent
Calcium carbonate equivalent: 0 to 1 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.6 to 8.4

Bt horizon:
Hue: 5YR to 7.5YR
Value: 4 to 6 dry; 3 to 5 moist
Chroma: 4 to 6
Texture, fine earth fraction: silt loam, clay loam, loam or sandy clay loam
Clay content: 15 to 35 percent
Fragments: 0 to 3 percent
Calcium carbonate equivalent: 0 to 1 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 6.6 to 8.4

Btk horizon:
Hue: 5YR to 7.5YR
Value: 5 to 8 dry; 3 to 5 moist
Chroma: 2 to 6
Texture, fine earth fraction: silt loam, loam, clay loam or sandy clay loam
Clay content: 15 to 35 percent
Fragments: 0 to 3 percent
Calcium carbonate equivalent: 1 to 15 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

Bk horizon:
Hue: 5YR to 7.5YR
Value: 5 to 8 dry; 4 to 7 moist
Chroma: 2 to 6
Texture, fine earth fraction: loam, sandy clay loam, very fine sandy loam or silt loam
Clay content: 10 to 30 percent
Fragments: 0 to 3 percent
Calcium carbonate equivalent: 5 to 40 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 8.4

Wetoe Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: mountains, fan remnants
Parent material: colluvium and slope alluvium from diorite
Elevation: 6,200 to 8,800 feet
Slope: 35 to 90 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Loamy-skeletal, mixed, superactive, mesic Aridic Haplustalfs

Typical Pedon

Wetoe very gravelly loam, in an area of Wetoe-Nees-Rock outcrop complex, 35 to 90 percent slopes; USGS Mariano Wash East topographic quadrangle; 37 degrees 14 minutes 33.90 seconds north latitude and 108 degrees 49 minutes 44.60 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 20 percent gravel, 15 percent cobbles, 1 percent stones.

A1—0 to1 inch; dark brown (7.5YR 3/3) very gravelly loam, very dark brown (7.5YR 2/3) moist; moderate fine granular structure; soft, very friable, nonsticky, nonplastic; common very fine roots throughout; many very fine dendritic tubular pores; 30 percent gravel, 10 percent cobbles, and 5 percent stones; neutral, (pH 6.6); abrupt smooth boundary.

A2—1 inch to 8 inches; brown (7.5YR 4/3) very gravelly loam, dark brown (7.5YR 3/3) moist; weak fine granular structure; soft, very friable, slightly sticky, slightly plastic; common medium and many very fine roots throughout; many very fine dendritic tubular pores; 30 percent gravel, 10 percent cobbles, and 5 percent stones; neutral, (pH 6.8); clear smooth boundary.

BA—8 to 18 inches; brown (7.5YR 5/4) very gravelly loam, brown (7.5YR 4/4) moist; weak fine subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common coarse, common medium, and many very fine roots throughout; common fine dendritic tubular pores; 30 percent gravel, 10 percent cobbles, and 5 percent stones; neutral, (pH 6.8); clear smooth boundary.

Bt1—18 to 31 inches; brown (7.5YR 5/4) very gravelly loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; moderately hard, firm, slightly sticky, slightly plastic; common coarse, common medium, and common very fine roots throughout; common fine dendritic tubular pores; 60 percent distinct clay films on faces of peds; 30 percent gravel, 10 percent cobbles, and 5 percent stones; neutral, (pH 6.8); gradual smooth boundary.

Bt2—31 to 38 inches; brown (7.5YR 5/4) very gravelly loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky, slightly plastic; common coarse, common medium and common very fine roots throughout; common fine dendritic tubular pores; 70 percent distinct clay films on faces of peds; 30 percent gravel, 10 percent cobbles, and 5 percent stones; neutral, (pH 6.8); gradual wavy boundary.

Bt3—38 to 60 inches; brown (7.5YR 5/4) very gravelly loam, brown (7.5YR 4/4) moist; moderate medium subangular blocky structure; hard, firm, slightly sticky, slightly

plastic; common medium, common coarse, and common very fine roots throughout; common fine dendritic tubular pores; 50 percent distinct clay films on faces of peds; 30 percent gravel, 10 percent cobbles, and 5 percent stones; neutral, (pH 6.8).

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 48 to 52 degrees F
Surface fragments: 15 to 60 percent

Particle-size control section (weighted average):
Clay content: 15 to 27 percent
Rock fragment content: 35 to 80 percent, mainly gravel and cobbles

A horizon:
Hue: 10YR to 7.5YR
Value: 3 or 5 dry; 2 or 4 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam or sandy loam
Clay content: 5 to 20 percent
Fragments: 35 to 80 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.3

Bt horizon:
Hue: 7.5YR
Value: 4 or 5 dry; 4 or 5 moist
Chroma: 4 to 6
Texture, fine earth fraction: loam, or sandy loam
Clay content: 15 to 27 percent
Fragments: 35 to 80 percent
Calcium carbonate equivalent: 0 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 6.1 to 7.3

Yarts Series

Depth class: very deep
Drainage class: well
Slowest permeability: 2.0 to 6.0 in/hr (moderately rapid)
Landform: terraces, alluvial fans
Parent material: alluvium derived from sandstone
Elevation: 5,400 to 6,200 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 120 to 135 days

Taxonomic class: Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents

Typical Pedon

Yarts fine sandy loam, 1 to 6 percent slopes; USGS Waterflow topographic quadrangle; 36 degrees 52 minutes 3.61 seconds north latitude and 108 degrees 24 minutes 8.42 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: none.

A—0 to 2 inches; brown (7.5YR 5/3) fine sandy loam, brown (7.5YR 4/3) moist; weak medium platy structure; soft, very friable, nonsticky, nonplastic; many very fine roots throughout; many very fine vesicular pores; very slightly effervescent; moderately alkaline (pH 8.4); abrupt smooth boundary.

C1—2 to 14 inches; brown (7.5YR 5/3) sandy loam, brown (7.5YR 4/3) moist; massive; slightly hard, friable, nonsticky, nonplastic; many very fine and common fine roots throughout; common very fine dendritic tubular pores; very slightly effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

C2—14 to 31 inches; brown (7.5YR 5/3) sandy loam, brown (7.5YR 4/3) moist; massive; slightly hard, friable, nonsticky, nonplastic; many very fine roots throughout; common very fine dendritic tubular pores; slightly effervescent; strongly alkaline (pH 9.0); abrupt smooth boundary.

C3—31 to 41 inches; brown (7.5YR 5/3) sandy loam, brown (7.5YR 4/3) moist; weak medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; many very fine and few medium roots throughout; many very fine dendritic tubular pores; very slightly effervescent; strongly alkaline (pH 8.6); abrupt smooth boundary.

C4—41 to 60 inches; brown (7.5YR 5/3) sandy loam, brown (7.5YR 4/3) moist massive; soft, very friable, nonsticky, nonplastic; few very fine roots throughout; common very fine dendritic tubular pores; 1 percent fine irregular carbonate masses; 2 percent gravel; very slightly effervescent; moderately alkaline (pH 8.4).

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Surface fragments: 0 to 5 percent

Particle-size control section (weighted average):
- *Clay content:* 5 to 18 percent
- *Rock fragment content:* 0 to 15 percent

A horizon:
- *Hue:* 5YR to 10YR
- *Value:* 5 or 6 dry; 3 or 4 moist
- *Chroma:* 3 or 4
- *Texture, fine earth fraction:* fine sandy loam
- *Clay content:* 8 to 18 percent
- *Fragments:* 0 to 10 percent
- *Calcium carbonate equivalent:* 1 to 5 percent
- *Gypsum content:* 0 percent
- *Electrical conductivity:* 0 mmhos/cm
- *Sodium adsorption ratio:* 0
- *Reaction:* pH 7.4 to 8.4

C horizon:
Hue: 5YR to 7.5YR
Value: 5 to 6 dry; 3 to 4 moist
Chroma: 3 to 8
Texture, fine earth fraction: sandy loam, loam or fine sandy loam
Clay content: 8 to 18 percent
Fragments: 0 to 10 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 9.0

Yogovuci Series

Depth class: very deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: paleoterraces, structural benches, fan remnants
Parent material: eolian material over old alluvium derived from mixed sources
Elevation: 4,800 to 5,700 feet
Slope: 1 to 6 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Argigypsids

Typical Pedon

Yogovuci very fine sandy loam, in an area of Yogovuci-Taqoci complex, 2 to 6 percent slopes; USGS Mariano Wash West topographic quadrangle; 37 degrees 8 minutes 34 seconds north latitude and 108 degrees 57 minutes 44 seconds west longitude. NAD 27 (colors are for dry soil unless otherwise noted).

Surface fragments: 10 percent gravel.

A—0 to 2 inches; light brown (7.5YR 6/4) very fine sandy loam, brown (7.5YR 5/4) moist; moderate very fine granular structure; soft, very friable, slightly sticky and nonplastic; many very fine roots throughout; 8 percent gravel; strongly effervescent; strongly alkaline (pH 8.5); clear smooth boundary.

BA—2 to 6 inches; light brown (7.5YR 6/4) loam, brown (7.5YR 5/4) moist; moderate thick platy structure parting to weak very fine granular structure; slightly hard, friable, moderately sticky and moderately plastic; many very fine roots throughout; many very fine dendritic tubular pores; 8 percent gravel; strongly effervescent; moderately alkaline (pH 8.1); clear smooth boundary.

Btk—6 to 13 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; slightly hard, friable, moderately sticky and moderately plastic; common very fine and few fine roots throughout; many very fine dendritic tubular pores; few distinct clay films on faces of peds and in pores; common medium irregular masses of carbonate; 1 percent gravel; strongly effervescent; moderately alkaline (pH 7.9); abrupt smooth boundary.

2Bty1—13 to 23 inches; very pale brown (10YR 7/3) gypsiferous clay loam, yellowish brown (10YR 5/6) moist; moderate medium subangular blocky structure; hard, very firm, moderately sticky and moderately plastic; few very fine roots throughout; common very fine dendritic tubular pores; few distinct clay films on faces of peds and in pores; many medium ventricular gypsum crystals and common medium irregular nests of gypsum; slightly effervescent; moderately alkaline (pH 7.9); gradual smooth boundary.

2Bty2—23 to 35 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; moderate medium angular blocky structure; extremely hard, slightly rigid, very sticky and very plastic; few very fine roots throughout; common very fine dendritic tubular pores; few distinct clay films on faces of peds and in pores; many distinct pressure faces on faces of peds; common fine irregular nests of gypsum and few medium gypsum rosettes; 2 percent gravel; very slightly effervescent; moderately alkaline (pH 8.1); abrupt wavy boundary.

2By1—35 to 48 inches; brownish yellow (10YR 6/6) loamy sand; yellowish brown (10YR 5/6) moist; massive; slightly hard, friable, nonsticky and nonplastic; few very fine roots throughout; common fine irregular gypsum crystals; 8 percent gravel; slightly effervescent; moderately alkaline (pH 8.3); abrupt wavy boundary.

2By2—48 to 59 inches; light yellowish brown (10YR 6/4) clay loam, yellowish brown (10YR 5/4) moist; weak medium prismatic structure parting to moderate medium angular blocky; extremely hard, slightly rigid, very sticky and very plastic; few very fine roots throughout; many very fine dendritic tubular pores; many distinct pressure faces on faces of peds; common fine irregular nests of gypsum and common medium gypsum rosettes; 5 percent gravel; strongly effervescent; moderately alkaline (pH 8.3); abrupt smooth boundary.

2By3—59 to 75 inches; light yellowish brown (10YR 6/4) gravelly sandy loam, yellowish brown (10YR 5/4) moist; single grain; loose, loose, slightly sticky and nonplastic; few very fine roots throughout; 23 percent gravel; strongly effervescent; moderately alkaline; (pH 8.3); abrupt smooth boundary.

2By4—75 to 80 inches; very pale brown (10YR 7/4) extremely gravelly loamy sand, yellowish brown (10YR 5/4) moist; single grain; loose, loose, nonsticky and nonplastic; few fine irregular carbonate crystals on bottom of rock fragments; few fine irregular gypsum crystals on the bottom of gravel; 75 percent gravel; violently effervescent; moderately alkaline (pH 8.1); abrupt smooth boundary.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 54 to 58 degrees F
Depth to gypsic horizon: 5 to 25 inches
Surface fragments: 0 to 15 percent

Particle-size control section (weighted average):
Clay content: 18 to 35 percent
Rock fragment content: 5 to 15 percent

A horizon:
Hue: 7.5YR
Value: 5 or 6 dry; 4 or 5 moist
Chroma: 3 or 4
Texture, fine earth fraction: very fine sandy loam
Clay content: 10 to 20 percent
Fragments: 0 to 10 percent igneous and sedimentary gravel
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 0 to 3 percent

Electrical conductivity: 0 to 4 mmhos/cm
Sodium adsorption ratio: 1 to 5
Reaction: pH 7.9 to 9.0

Btk horizon:
Hue: 7.5YR to 10YR
Value: 6 or 7 dry; 5 or 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: loam, clay loam or very fine sandy loam
Clay content: 18 to 40 percent
Fragments: 0 to 10 percent gravel
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 0 to 3 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 1 to 13
Reaction: pH 7.9 to 8.4

2Bty horizon:
Hue: 10YR
Value: 6 or7 dry; 5 to 7 moist
Chroma: 3 to 6
Texture, fine earth fraction: loam, gypsiferous clay loam or clay loam
Clay content: 18 to 35 percent
Fragments: 0 to 15 percent igneous and sedimentary gravel
Calcium carbonate equivalent: 1 to 10 percent
Gypsum content: 10 to 20 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 1 to 13
Reaction: pH 7.9 to 8.4

2By horizon:
Hue: 10YR
Value: 6 or 7 dry; 5 or 6 moist
Chroma: 3 or 6
Texture, fine earth fraction: coarsely stratified loamy sand, sandy loam, loam, sandy clay loam, clay or clay loam
Clay content: 10 to 50 percent
Fragments: 0 to 35 percent igneous and sedimentary gravel
Calcium carbonate equivalent: 5 to 15 percent
Gypsum content: 1 to 15 percent
Electrical conductivity: 4 to 16 mmhos/cm
Sodium adsorption ratio: 1 to 13
Reaction: pH 7.9 to 9.0

Zigzag Series

Depth class: very shallow to shallow
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: knobs, hills
Parent material: residuum derived from shale
Elevation: 6,200 to 7,400 feet
Slope: 25 to 65 percent

Climatic data:
Mean annual precipitation: 13 to 16 inches

Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 100 to 120 days

Taxonomic class: Clayey, smectitic, calcareous, mesic, shallow Aridic Ustorthents

Typical Pedon

Zigzag clay loam, in an area of Cahona-Zigzag complex, 5 to 45 percent slopes; USGS Mud Creek topographic quadrangle; 37 degrees 17 minutes 38.2 seconds north latitude and 108 degrees 44 minutes 9.0 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 15 percent gravel, 5 cobbles, 5 percent stones.

A—0 to 3 inches; brown (10YR 5/3) clay loam, brown (10YR 4/3) moist; very fine granular structure; soft, very friable, moderately sticky, moderately plastic; many very fine roots throughout; common very fine vesicular pores; 10 percent parachanners; strongly effervescent; moderately alkaline (pH 8.0); clear smooth boundary.
C—3 to 13 inches; brown (10YR 5/3) parachannery clay loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; slightly hard, friable, very sticky, very plastic; common very fine and few fine roots throughout; common very fine dendritic tubular pores; 20 percent parachanners; strongly effervescent; moderately alkaline (pH 8.2); gradual smooth boundary.
Cr—13 inches; Mancos shale.

Range in Characteristics

Soil moisture: aridic ustic
Mean annual soil temperature: 48 to 52 degrees F
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Depth to calcareous material: 0 to 3 inches
Surface rock fragments: 35 to 50 percent channers

Particle-size control section (weighted average):
Clay content: 35 to 55 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 10YR to 5Y
Value: 5 or 6 dry; 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam
Clay content: 27 to 40 percent
Fragments: 5 to 50 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

C horizon:
Hue: 10YR to 5Y
Value: 5 to 7 dry; 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam, clay, silty clay loam or silty clay
Clay content: 27 to 55 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 1 to 10 percent

Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

Zwicker Series

Depth class: moderately deep
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: hills
Parent material: residuum derived from shale
Elevation: 4,800 to 5,700 feet
Slope: 3 to 12 percent

Climatic data:
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 52 to 56 degrees F
Frost-free period: 135 to 160 days

Taxonomic class: Fine, smectitic, mesic Chromic Haplotorrerts

Typical Pedon

Zwicker stony clay loam, in an area of Uzacol-Zwicker-Claysprings complex, 3 to 12 percent slopes, from the adjoining Cortez Soil Survey Area; USGS Bowdish Canyon topographic quadrangle; 37 degrees 21 minutes 16 seconds north latitude and 108 degrees 56 minutes 18 seconds west longitude. NAD 27 (colors are for dry soils unless otherwise noted).

Surface fragments: 10 percent cobbles, 5 percent stones.

A1—0 to 1 inch; light brown (7.5YR 6/4) stony clay loam, brown (7.5YR 5/4) moist; moderate very fine granular structure; soft, very friable, moderately sticky and moderately plastic; strongly effervescent; 2 percent gravel, 10 percent cobbles, and 5 percent stones; moderately alkaline (pH 8.4); clear smooth boundary.

A2—1 inch to 4 inches; light brown (7.5YR 6/4) clay loam, brown (7.5YR 5/4) moist; weak medium platy structure parting to moderate fine granular; soft, very friable, moderately sticky and moderately plastic; strongly effervescent; strongly alkaline (pH 8.8); clear smooth boundary.

Bss—4 to 10 inches; light brown (7.5YR 6/4) clay, brown (7.5YR 5/4) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; hard, firm, sticky and plastic; strongly effervescent; strongly alkaline (pH 8.6); gradual wavy boundary.

Bssky—10 to 17 inches; light brown (7.5YR 6/4) clay, brown (7.5YR 5/4) moist; weak coarse prismatic structure parting to moderate medium subangular blocky; very hard, firm, moderately sticky and moderately plastic; few fine irregular seams and soft masses of calcium carbonate; many fine gypsum crystals; violently effervescent; moderately alkaline (pH 8.2); gradual wavy boundary.

Bky—17 to 32 inches; light brown (7.5YR 6/4) clay, brown (7.5YR 5/4) moist; massive; extremely hard, very firm, moderately sticky and moderately plastic; many fine seams and soft masses of calcium carbonate; many fine gypsum

crystals; violently effervescent; moderately alkaline (pH 8.2); gradual wavy boundary.
Cr—32 inches; soft Morrison shale.

Range in Characteristics

Soil moisture: typic aridic
Mean annual soil temperature: 52 to 59 degrees F
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Surface rock fragments: 0 to 60 percent

Particle-size control section (weighted average):
Clay content: 35 to 60 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 5YR to 10YR
Value: 5 to 7 dry; 3 to 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay loam or clay
Clay content: 27 to 40 percent
Fragments: 0 to 35 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 9.0

Bss (Cky when present) horizon:
Hue: 7.5YR to 10YR
Value: 5 to 7 dry; 3 to 6 moist
Chroma: 3 or 4
Texture, fine earth fraction: clay or clay loam
Clay content: 35 to 60 percent
Fragments: 0 to 15 percent
Calcium carbonate equivalent: 5 to 10 percent
Gypsum content: 1 to 10 percent
Electrical conductivity: 2 to 4 mmhos/cm
Sodium adsorption ratio: 0 to 5
Reaction: pH 7.4 to 9.0

Zyme Series

Depth class: very shallow to shallow
Drainage class: well
Slowest permeability: 0.06 to 0.2 in/hr (slow)
Landform: knobs, hills
Parent material: residuum derived from shale
Elevation: 5,400 to 6,200 feet
Slope: 3 to 70 percent

Climatic data:
Mean annual precipitation: 10 to 13 inches
Mean annual air temperature: 50 to 52 degrees F

Frost-free period: 120 to 135 days

Taxonomic class: Clayey, smectitic, calcareous, mesic, shallow Ustic Torriorthents

Typical Pedon

Zyme clay loam, in an area of Zyme-Katzine, dry complex, 15 to 75 percent slopes; USGS Battlerock topographic quadrangle; 37 degrees 15 minutes 54.7 seconds north latitude and 108 degrees 52 minutes 19.2 seconds west longitude. NAD 83 (colors are for dry soil unless otherwise noted).

Surface fragments: 10 percent gravel, 5 percent cobbles, 1 percent stones.

A1—0 to1 inch; dark gray (10YR 4/1) clay loam, very dark gray (10YR 3/1) moist; weak fine granular structure; soft, very friable, moderately sticky, moderately plastic; common very fine roots throughout; 5 percent parachanners; slightly effervescent; slightly alkaline (pH 7.6); abrupt smooth boundary.

A2—1 inch to 4 inches; dark gray (10YR 4/1) clay loam, very dark gray (10YR 3/1) moist; weak fine granular structure; slightly hard, friable, moderately sticky, moderately plastic; common very fine roots throughout; 10 percent parachanners; moderately effervescent; slightly alkaline (pH 7.6); clear smooth boundary.

C1—4 to 11 inches; dark gray (10YR 4/1) parachannery clay loam, dark gray (10YR 4/1) moist; massive; soft, very friable, moderately sticky, moderately plastic; common very fine roots throughout; common very fine dendritic tubular pores; 20 percent parachanners; strongly effervescent; moderately alkaline (pH 7.8); clear smooth boundary.

C2—11 to 18 inches; gray (10YR 5/1) very parachannery clay loam, dark gray (10YR 4/1) moist; massive; soft, very friable, moderately sticky, moderately plastic; common very fine roots throughout; common very fine dendritic tubular pores; 50 percent parachanners; strongly effervescent; moderately alkaline (pH 7.8); clear smooth boundary.

Cr—18 inches; Mancos shale.

Range in Characteristics

Soil moisture: ustic aridic
Mean annual soil temperature: 52 to 54 degrees F
Depth to restrictive feature: 6 to 20 inches to bedrock (paralithic)
Surface fragments: 5 to 60 percent

Particle-size control section (weighted average):
Clay content: 35 to 45 percent
Rock fragment content: 0 to 15 percent

A horizon:
Hue: 10YR to 2.5Y
Value: 5 or 6 dry; 3 to 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay loam
Clay content: 27 to 40 percent
Fragments: 15 to 60 percent
Calcium carbonate equivalent: 1 to 5 percent
Gypsum content: 0 percent
Electrical conductivity: 0 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

C horizon:

Hue: 10YR or 2.5Y
Value: 5 to 7 dry; 4 or 5 moist
Chroma: 2 to 4
Texture, fine earth fraction: clay or clay loam
Clay content: 35 to 45 percent
Fragments: 0 to 35 percent
Calcium carbonate equivalent: 1 to 10 percent
Gypsum content: 0 percent
Electrical conductivity: 0 to 2 mmhos/cm
Sodium adsorption ratio: 0
Reaction: pH 7.4 to 8.4

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Arroyo. The flat-floored channel of an ephemeral stream, commonly with very steep to vertical banks cut in alluvium.

Aspect. The direction in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Awitava. Ute word meaning "for a long time."
Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.
Badland. Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.
Bajada. A broad alluvial slope extending from the base of a mountain range out into a basin and formed by coalescence of separate alluvial fans.
Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.
Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).
Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.
Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.
Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.
Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.
Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.
Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.
Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.
Breaks. The steep and very steep broken land at the border of an upland summit that is dissected by ravines.
Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.
Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
Butte. An isolated small mountain or hill with steep or precipitous sides and a top variously flat, rounded, or pointed that may be a residual mass isolated by erosion or an exposed volcanic neck.
Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
Caliche. A more or less cemented deposit of calcium carbonate in soils of warm-temperate, subhumid to arid areas. Caliche occurs as soft, thin layers in the soil or as hard, thick beds directly beneath the solum, or it is exposed at the surface by erosion.
Canopy. The leafy crown of trees or shrubs. (See Crown.)

Canyon. A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Cement rock. Shaly limestone used in the manufacture of cement.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are

common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conglomerate. A coarse grained, clastic rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coppice dune. A small dune of fine grained soil material stabilized around shrubs or small trees.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cuesta. A hill or ridge that has a gentle slope on one side and a steep slope on the other; specifically, an asymmetric, homoclinal ridge capped by resistant rock layers of slight or moderate dip.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Desert pavement. On a desert surface, a layer of gravel or larger fragments that was emplaced by upward movement of the underlying sediments or that remains after finer particles have been removed by running water or the wind.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Draw. A small stream valley that generally is more open and has broader bottom land than a ravine or gulch.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. Area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Flood plain step. A nearly level terrace like alluvial surface that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gilgai. Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the

microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Glacial outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or

lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net

irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kava. Ute word meaning “horse.”

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Kwiavu. Ute word meaning “oak tree.”

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the

volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by wind.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Mesa. A broad, nearly flat topped and commonly isolated upland mass characterized by summit widths that are more than the heights of bounding erosional scarps.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium,* from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse,* more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of restricted summit area (relative to a plateau)

and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Oagamati. Ute word meaning “salty.”

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Pagayvay. Ute word meaning “ford” or “cross water.”

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permafrost. Layers of soil, or even bedrock, occurring in arctic or subarctic regions, in which a temperature below freezing has existed continuously for a long time.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. The use of fire as a tool to achieve a management objective on a predetermined area under conditions where the intensity and extent of the fire are controlled.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable

vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water

that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Slickensides. Polished and grooved surfaces produced by one mass sliding past

another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is silty or clayey, is slippery when wet, and is low in productivity.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 1 percent
Gently sloping	1 to 3 percent
Moderately sloping	3 to 6 percent
Strongly sloping	6 to 12 percent
Moderately steep	12 to 25 percent
Steep	25 to 45 percent
Very steep	45 percent and higher

Classes for complex slopes are as follows:

Nearly level	0 to 1 percent
Undulating	1 to 3 percent
Gently rolling	3 to 6 percent
Rolling	6 to 12 percent
Hilly	12 to 25 percent
Steep	25 to 45 percent
Very steep	45 percent and higher

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^{+} to $Ca^{++} + Mg^{++}$. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25

Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Taqoci. Ute word meaning “crow” or “raven.”

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are

slightly outside the range defined for the family of the series for which the soils are named.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Total dry-weight production is the amount of vegetation that can be expected to grow annually on well managed rangeland that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

Tupuyci. Ute word meaning "rock" or "stone."

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.
Windthrow. The uprooting and tipping over of trees by the wind.
Yogovuci. Ute word meaning “coyote.”

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-2000 at Cortez, CO1886)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average daily	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January-----	40.3	12.6	26.5	58	-12	3	1.05	0.38	1.55	3	6.5
February----	45.4	18.6	32.0	62	-7	13	0.98	0.43	1.46	3	4.2
March-------	53.3	25.2	39.3	71	7	77	1.40	0.27	2.40	4	1.7
April-------	61.6	30.1	45.9	79	15	206	0.90	0.24	1.57	2	1.2
May---------	71.4	38.1	54.7	86	23	456	1.01	0.28	1.71	3	0.0
June--------	83.0	46.2	64.6	95	31	728	0.44	0.05	0.79	1	0.0
July--------	87.9	54.0	70.9	98	41	954	1.19	0.44	1.92	3	0.0
August------	85.6	53.4	69.5	95	42	913	1.44	0.67	2.17	3	0.0
September---	78.0	44.5	61.2	91	28	627	1.32	0.57	2.04	3	0.0
October-----	65.9	33.6	49.7	82	17	308	1.63	0.47	2.74	4	0.3
November----	50.6	23.0	36.8	69	4	50	1.18	0.51	1.83	3	1.7
December----	41.9	15.0	28.5	59	-8	4	0.93	0.33	1.43	2	3.8
Yearly:											
Average---	63.7	32.9	48.3	---	---	---	---	---	---	---	---
Extreme---	101	-22	---	100	-16	---	---	---	---	---	---
Total-----	---	---	---	---	---	4,339	13.48	9.92	15.81	34	19.4

Table 1.--Temperature and Precipitation—continued

(Recorded in the period 1971-2000 at Mesa Verde National Park, CO5531)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average daily	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January-----	39.1	17.7	28.4	55	-3	4	1.88	0.61	2.98	5	21.2
February----	43.5	21.8	32.7	60	0	15	1.53	0.51	2.53	4	15.1
March-------	50.0	27.1	38.5	68	10	71	1.91	0.49	3.44	5	14.5
April-------	58.5	32.3	45.4	75	15	203	1.28	0.53	1.97	3	6.1
May---------	68.7	40.6	54.7	84	26	456	1.26	0.31	2.29	3	0.9
June--------	80.3	49.8	65.1	93	33	729	0.55	0.09	0.90	1	0.0
July--------	85.4	55.9	70.7	96	45	942	1.66	0.70	2.61	4	0.0
August------	83.0	54.5	68.7	93	44	886	2.00	1.00	3.02	4	0.0
September---	75.4	47.4	61.4	88	31	637	1.61	0.70	2.50	3	0.0
October-----	63.3	36.9	50.1	79	18	327	1.85	0.45	3.28	4	1.9
November----	48.5	26.1	37.3	67	6	69	1.67	0.50	2.94	3	9.4
December----	40.4	18.9	29.6	57	-1	6	1.38	0.39	2.40	3	13.7
Yearly:											
Average---	61.3	35.7	48,5	---	---	---	---	---	---	---	---
Extreme---	100	-15	---	96	-7	---	---	---	---	---	---
Total-----	---	---	---	---	---	4,344	18.58	14.86	22.24	42	82.8

Table 1.--Temperature and Precipitation—continued

(Recorded in the period 1961-90 at Shiprock, NM8284)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average daily	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January-----	43.7	16.6	30.1	62	-3	5	0.58	0.09	0.98	2	1.8
February----	51.7	21.6	36.6	69	1	39	0.51	0.08	0.93	1	0.6
March-------	61.5	27.3	44.4	79	9	167	0.56	0.05	0.96	1	0.5
April-------	70.2	33.4	51.8	86	15	352	0.42	0.00	0.76	1	0.0
May---------	80.7	43.1	61.9	96	25	664	0.57	0.00	1.02	1	0.0
June--------	90.5	50.6	70.6	103	35	906	0.24	0.00	0.42	0	0.0
July--------	94.9	57.7	76.3	105	42	1,092	0.74	0.11	1.23	1	0.0
August------	91.9	56.8	74.3	102	41	1,046	1.17	0.36	1.85	3	0.0
September---	84.9	47.4	66.2	97	28	765	0.70	0.22	1.15	2	0.0
October-----	71.9	34.8	53.4	88	17	408	0.76	0.15	1.36	2	0.1
November----	55.6	24.7	40.2	73	6	88	0.68	0.17	1.04	2	0.2
December----	44.5	17.4	31.0	61	-1	8	0.66	0.12	1.24	2	1.2
Yearly:											
Average---	70.2	36.0	53.1	---	---	---	---	---	---	---	---
Extreme---	107	-14	---	105	-6	---	---	---	---	---	---
Total-----	---	---	---	---	---	5,541	7.58	4.26	9.17	18	4.4

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Cortez, CO1886)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 9	May 23	June 13
2 years in 10 later than--	May 3	May 18	June 7
5 years in 10 later than--	April 22	May 9	May 28
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 6	Sept. 25	Sept. 15
2 years in 10 earlier than--	Oct. 11	Oct. 1	Sept. 19
5 years in 10 earlier than--	Oct. 21	Oct. 11	Sept. 28

Table 2.--Freeze Dates in Spring and Fall--continued

(Recorded in the period 1971-2000 at Mesa Verde National Park, CO5531)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 1	May 26	June 6
2 years in 10 later than--	April 25	May 19	May 31
5 years in 10 later than--	April 15	May 7	May 19
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 16	Oct. 2	Sept. 21
2 years in 10 earlier than--	Oct. 21	Oct. 8	Sept. 27
5 years in 10 earlier than--	Oct. 30	Oct. 19	Oct. 9

Table 2.--Freeze Dates in Spring and Fall--continued

(Recorded in the period 1971-2000 at Shiprock, NM 8284)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 13	May 23	June 10
2 years in 10 later than--	May 4	May 14	May 31
5 years in 10 later than--	April 18	April 28	May 12
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 4	Sept. 24	Sept. 14
2 years in 10 earlier than--	Oct. 11	Sept. 30	Sept. 20
5 years in 10 earlier than--	Oct. 23	Oct. 12	Oct. 1

Table 3.--Growing Season

(Recorded in the period 1971-2000 at Cortez, CO1886)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	160	132	107
8 years in 10	168	141	113
5 years in 10	184	156	123
2 years in 10	200	172	133
1 year in 10	208	180	139

(Recorded in the period 1971-2000 at Mesa Verde, CO5531)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	172	140	116
8 years in 10	181	149	124
5 years in 10	196	164	141
2 years in 10	212	180	158
1 year in 10	220	188	166

Table 3.--Growing Season--Continued

(Recorded in the period 1971-2000 at Shiprock, NM8284)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	153	134	112
8 years in 10	165	146	124
5 years in 10	187	171	147
2 years in 10	210	195	171
1 year in 10	221	208	183

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	La Plata County	Montezuma County	San Juan County	Total	
					Area	Extent
		Acres	Acres	Acres	Acres	Pct
1	Arabrab-Longburn complex, 3 to 15 percent slopes	---	12,355	---	12,355	2.2
2	Awitava extremely gravelly very fine sandy loam, 3 to 9 percent slopes	---	5,228	---	5,228	0.9
3	Badland-Rock outcrop complex	---	799	143	942	0.2
4	Barx-Gapmesa complex, 2 to 6 percent slopes	---	1,378	485	1,863	0.3
5	Barx loam, 6 to 12 percent slopes	---	1	---	1	*
6	Barx very fine sandy loam, 1 to 4 percent slopes	---	784	---	784	0.1
7	Battlerock clay loam, 0 to 6 percent slopes	---	5	---	5	*
8	Battlerock silt loam, moderately saline, sodic, 0 to 3 percent slopes	---	3,227	---	3,227	0.6
9	Battlerock silty clay loam, slightly saline, sodic, 1 to 3 percent slopes	---	6,126	---	6,126	1.1
10	Bebeevar-Walrees complex, 0 to 2 percent slopes	---	317	---	317	*
11	Benally fine sandy loam, 1 to 5 percent slopes	---	1,717	1,243	2,960	0.5
12	Blackston-Camac-Rock outcrop complex, 0 to 60 percent slopes	---	2,314	12	2,326	0.4
13	Bluechief fine sandy loam, 1 to 3 percent slopes	---	122	---	122	*
14	Bluechief fine sandy loam, 3 to 6 percent slopes	---	472	52	524	0.1
15	Bluechief-Rock outcrop complex, 1 to 12 percent slopes	---	7,116	---	7,116	1.3
16	Cahona-Pulpit complex, 3 to 9 percent slopes	76	5,451	554	6,081	1.1
17	Cahona-Zigzag complex, 5 to 45 percent slopes	---	1,483	---	1,483	0.3
18	Camac-Kimbeto-Badland association, 0 to 50 percent slopes	---	454	---	454	*
19	Chimrock loam, sodic, 1 to 3 percent slopes	---	3,070	1,355	4,425	0.8
20	Chimrock very fine sandy loam, 1 to 3 percent slopes	---	10,900	1,580	12,480	2.2
21	Claysprings-Badland complex, 35 to 60 percent slopes	---	375	5	380	*
22	Claysprings very stony clay loam, 12 to 65 percent slopes	---	565	---	565	0.1
23	Cowboy clay, 1 to 3 percent slopes	---	1,839	---	1,839	0.3
24	Cowboy-Kava complex, 1 to 3 percent slopes	---	2,246	---	2,246	0.4
25	Cowboy-Kava complex, 3 to 12 percent slopes	---	4,708	---	4,708	0.8
26	Decorock-Salamander association, 1 to 50 percent slopes	---	5,592	739	6,331	1.1
27	Decorock-Salamander-Badlands association, 3 to 60 percent slopes	---	2,672	---	2,672	0.5
28	Dolcan-Kucu association, 3 to 25 percent slopes	608	501	---	1,109	0.2
29	Elias-Yarts complex, 1 to 6 percent slopes	---	---	365	365	*
30	Farb-Rock outcrop complex, 3 to 12 percent slopes	---	2,111	693	2,804	0.5
31	Farb-Rock outcrop-Fruitland complex, 1 to 45 percent slopes	---	---	2,465	2,465	0.4

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--continued

Map symbol	Soil name	La Plata County	Montezuma County	San Juan County	Total	
					Area	Extent
		Acres	Acres	Acres	Acres	Pct
32	Fardraw very cobbly loam, 0 to 9 percent slopes	---	19	---	19	*
33	Farview-Beclabito-Rock outcrop complex, 1 to 10 percent slopes	---	1,334	5,492	6,826	1.2
34	Farview-Rock outcrop complex, 1 to 10 percent slopes	---	7,449	6,543	13,992	2.5
35	Fluvents-Fluvaquents complex, 0 to 3 percent slopes	---	1,618	---	1,618	0.3
36	Gladel-Pulpit complex, 3 to 9 percent slopes	1,395	4,937	2,275	8,607	1.5
37	Greycap-Nomad complex, 1 to 6 percent slopes	---	4,827	---	4,827	0.9
38	Gypsey sandy clay loam, 3 to 6 percent slopes	---	10,857	---	10,857	1.9
39	Gypsey sandy clay loam, 6 to 12 percent slopes	---	11,788	---	11,788	2.1
40	Herm loam, 3 to 25 percent slopes	---	960	---	960	0.2
41	Hope silty clay loam, 1 to 6 percent slopes	---	6,455	---	6,455	1.1
42	Hoskay-Patel-Badland complex, 1 to 25 percent slopes	---	49	---	49	*
43	Ives sandy loam, 1 to 3 percent slopes	---	3,179	341	3,520	0.6
44	Jeddito-Escavada association, 0 to 3 percent slopes	---	1,357	139	1,496	0.3
45	Jeddito loamy fine sand, 0 to 2 percent slopes	---	5	---	5	*
46	Juanalo gravely fine sandy loam, 1 to 6 percent slopes	---	1,731	---	1,731	0.3
47	Katzine very gravelly fine sandy loam, 15 to 45 percent slopes	---	4,560	---	4,560	0.8
48	Lazear-Rock outcrop complex, 12 to 65 percent slopes	11	26	---	37	*
49	Lillings silty clay loam, 3 to 6 percent slopes	---	11	---	11	*
50	Littlehat-Persayo-Badland complex, 3 to 45 percent slopes	---	651	---	651	0.1
51	Littlehat-Persayo-Nataani complex, 1 to 15 percent slopes	---	1,670	113	1,783	0.3
52	Littlewater-Rubble land-Rock outcrop complex, 25 to 90 percent slopes	---	3,950	---	3,950	0.7
53	Longburn-Rock outcrop complex, 10 to 45 percent slopes	---	2,049	---	2,049	0.4
54	Longburn-Rock outcrop complex, 45 to 80 percent slopes	---	562	---	562	0.1
55	Mack fine sandy loam, 0 to 6 percent slopes	---	558	512	1,070	0.2
56	Mack fine sandy loam, 1 to 3 percent slopes	---	2,261	---	2,261	0.4
57	Mack fine sandy loam, 3 to 6 percent slopes	---	1,039	---	1,039	0.2
58	Mariano very fine sandy loam, 1 to 3 percent slopes	---	2,889	---	2,889	0.5
59	Mariano very fine sandy loam, 3 to 6 percent slopes	---	2,478	---	2,478	0.4
60	Mariano very fine sandy loam, 3 to 6 percent slopes, stony	---	811	---	811	0.1
61	Mikett clay loam, saline-sodic, 0 to 3 percent slopes	---	142	---	142	*
62	Mikett clay loam, 0 to 3 percent slopes	---	6	---	6	*
63	Mikim clay loam, 1 to 3 percent slopes	---	288	---	288	*
64	Mikim loam, 3 to 6 percent slopes	---	893	785	1,678	0.3

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--continued

Map symbol	Soil name	La Plata County	Montezuma County	San Juan County	Total	
					Area	Extent
		Acres	Acres	Acres	Acres	Pct
65	Monierco fine sandy loam, 3 to 12 percent slopes	---	1,075	4,486	5,561	1.0
66	Morefield loam, 1 to 3 percent slopes	---	715	---	715	0.1
67	Morefield loam, 3 to 6 percent slopes	---	2,042	---	2,042	0.4
68	Nataani-Yogovuci complex, 3 to 9 percent slopes	---	1,126	---	1,126	0.2
69	Oagamati silty clay loam, 1 to 6 percent slopes	---	4,780	---	4,780	0.8
70	Pagayvay extremely gravelly coarse sandy loam, 1 to 6 percent slopes	---	712	---	712	0.1
71	Persayo-Cairn-Patel complex, 1 to 25 percent slopes	---	741	---	741	0.1
72	Persayo gravelly loam, 12 to 45 percent slopes	---	5,386	---	5,386	0.9
73	Persayo silty clay loam, 3 to 12 percent slopes	---	13,680	---	13,680	2.4
74	Persayo-Yogovuci association, 1 to 12 percent slopes	---	1,718	---	1,718	0.3
75	Picliff silty clay loam, 3 to 9 percent slopes	---	---	1,960	1,960	0.3
76	Pogo loam, 0 to 2 percent slopes	---	2	---	2	*
77	Prater-Dolcan complex, 25 to 60 percent slopes	---	1,534	---	1,534	0.3
78	Pulpit loam, 3 to 12 percent slopes	30	491	33	554	0.1
79	Ramper loam, 0 to 3 percent slopes	---	157	---	157	*
80	Ravola clay loam, 0 to 3 percent slopes	---	306	---	306	*
81	Ravola silt loam, 1 to 3 percent slopes	---	5,318	---	5,318	0.9
82	Ravola very fine sandy loam, 1 to 3 percent slopes	---	234	---	234	*
83	Redlands fine sandy loam, 1 to 3 percent slopes	---	2,724	---	2,724	0.5
84	Redlands fine sandy loam, 3 to 6 percent slopes	---	1,400	---	1,400	0.2
85	Rizno-Gapmesa complex, 3 to 9 percent slopes	---	3,517	745	4,262	0.8
86	Rock outcrop	---	589	320	909	0.2
87	Rock outcrop-Farview complex, 10 to 25 percent slopes	---	---	1,710	1,710	0.3
88	Romberg-Crosscan complex, 6 to 25 percent slopes	---	8,064	10,736	18,800	3.3
89	Romberg-Crosscan-Rock outcrop complex, 25 to 80 percent slopes	1,752	54,707	11,575	68,034	12.0
90	Roubideau loam, 1 to 6 percent slopes	---	435	---	435	*
91	Sharps loam, dry, 6 to 12 percent slopes	---	7	---	7	*
92	Sharps, dry-Gapmesa complex, 6 to 12 percent slopes	---	62	---	62	*
93	Sheek-Archuleta complex, 6 to 25 percent slopes	---	68	---	68	*
94	Sheek-Archuleta-Rock outcrop complex, 25 to 80 percent slopes	---	1,477	---	1,477	0.3
95	Sheek-Archuleta-Rock outcrop complex, 25 to 80 percent slopes, north aspect	---	978	---	978	0.2
96	Sheppard fine sand, 1 to 6 percent slopes	---	754	---	754	0.1
97	Sideshow silty clay loam, 0 to 3 percent slopes	---	502	---	502	0.1

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--continued

Map symbol	Soil name	La Plata County	Montezuma County	San Juan County	Total	
					Area	Extent
		Acres	Acres	Acres	Acres	Pct
98	Sideshow silty clay loam, 3 to 6 percent slopes	---	816	---	816	0.1
99	Simpatico loam, 1 to 3 percent slopes	325	572	---	897	0.2
100	Snapill very fine sandy loam, 1 to 6 percent slopes	---	1,513	3,495	5,008	0.9
101	Stephouse-Rock outcrop complex, 3 to 10 percent slopes	---	404	---	404	*
102	Strych-Eagleye-Rock outcrop complex, 15 to 70 percent slopes	---	9,442	12,758	22,200	3.9
103	Tocito-Gullied land complex, 1 to 3 percent slopes	---	168	476	644	0.1
104	Tohona-Kimnoli-Claysprings complex, 2 to 45 percent slopes	---	42	3	45	*
105	Torriorthents, 12 to 65 percent slopes	---	336	545	881	0.2
106	Torriorthents-Badland complex, 25 to 100 percent slopes	---	20,806	49	20,855	3.7
107	Towaoc-Kwiavu complex, 6 to 35 percent slopes	---	879	---	879	0.2
108	Towaoc very gravelly sandy loam, 35 to 75 percent slopes	---	4,014	---	4,014	0.7
109	Tragmon-Sheek complex, 12 to 25 percent slopes	---	908	---	908	0.2
110	Tupuyci-Ives complex, 1 to 3 percent slopes	---	1,185	---	1,185	0.2
111	Typic Torriorthents-Rock outcrop complex, 12 to 80 percent slopes	---	9,576	---	9,576	1.7
112	Ustic Torrifluvents, 0 to 3 percent slopes	---	1,993	514	2,507	0.4
113	Ustic Torriorthents-Gullied land complex, 1 to 60 percent slopes	---	596	---	596	0.1
114	Uzacol-Zwicker-Claysprings complex, 3 to 12 percent slopes	---	1,885	---	1,885	0.3
115	Uzona loam, 1 to 6 percent slopes	---	1,758	106	1,864	0.3
116	Vessilla-Rock outcrop complex, 5 to 25 percent slopes	7,725	26,446	17,417	51,588	9.1
117	Vosburg fine sandy loam, 3 to 8 percent slopes	129	---	---	129	*
118	Water	---	37	---	37	*
119	Water-Riverwash complex	---	126	---	126	*
120	Wauquie very stony loam, 6 to 25 percent slopes	---	233	---	233	*
121	Wauquie-Dolcan complex, 6 to 25 percent slopes	---	248	---	248	*
122	Wauquie-Dolcan-Rock outcrop complex, 25 to 80 percent slopes	1,635	24,027	1,655	27,317	4.8
123	Wetherill-Atlatl association, 1 to 15 percent slopes	---	1,356	37	1,393	0.2
124	Wetherill-Kucu complex, 3 to 6 percent slopes	1,242	6,618	---	7,860	1.4
125	Wetherill loam, 3 to 6 percent slopes	---	6	---	6	*
126	Wetherill silt loam, 1 to 3 percent slopes	---	2,649	1,894	4,543	0.8
127	Wetherill silt loam, 3 to 6 percent slopes	2,087	9,496	3,483	15,066	2.7
128	Wetherill silt loam, 6 to 12 percent slopes	1	124	239	364	*
129	Wetherill-Wetoe complex, 3 to 12 percent slopes	---	1,338	---	1,338	0.2
130	Wetoe-Nees-Rock outcrop complex, 35 to 90 percent slopes	---	13,158	---	13,158	2.3

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--continued

Map symbol	Soil name	La Plata County	Montezuma County	San Juan County	Total	
					Area	Extent
		Acres	Acres	Acres	Acres	Pct
131	Yarts fine sandy loam, 1 to 6 percent slopes-	135	843	4,777	5,755	1.0
132	Yogovuci-Taqoci complex, 2 to 6 percent slopes	---	9,190	---	9,190	1.9
133	Zigzag-Sideshow complex, 25 to 65 percent slopes	146	2,306	---	2,452	0.4
134	Zyme gravelly clay loam, 3 to 12 percent slopes	---	291	---	291	*
135	Zyme-Katzine, dry, complex, 15 to 75 percent slopes	---	4,412	---	4,412	0.8
136	Zyme very channery clay loam, 12 to 65 percent slopes	---	4,368	---	4,368	0.8
	Total	17,297	444,803	104,904	567,004	100.0

* Less than 0.1 percent.

Table 5.--Prime and Other Important Farmland

(Only the soils considered prime or important farmland are listed. Urban or built-up areas of the soils listed are not considered prime or important farmland. If a soil is prime or important farmland only under certain conditions, the conditions are specified in parentheses after the soil name.)

Map symbol	Map unit name	Farmland Classification
7	Battlerock clay loam, 0 to 6 percent slopes	Prime farmland if irrigated
23	Cowboy clay, 1 to 3 percent slopes	Prime farmland if irrigated
55	Mack fine sandy loam, 0 to 6 percent slopes	Prime farmland if irrigated
56	Mack fine sandy loam, 1 to 3 percent slopes	Prime farmland if irrigated
57	Mack fine sandy loam, 3 to 6 percent slopes	Prime farmland if irrigated
63	Mikim clay loam, 1 to 3 percent slopes	Prime farmland if irrigated
64	Mikim loam, 3 to 6 percent slopes	Prime farmland if irrigated
66	Morefield loam, 1 to 3 percent slopes	Prime farmland if irrigated
67	Morefield loam, 3 to 6 percent slopes	Prime farmland if irrigated
79	Ramper loam, 0 to 3 percent slopes	Prime farmland if irrigated
81	Ravola silt loam, 1 to 3 percent slopes	Prime farmland if irrigated
83	Redlands fine sandy loam, 1 to 3 percent slopes	Prime farmland if irrigated
84	Redlands fine sandy loam, 3 to 6 percent slopes	Prime farmland if irrigated
97	Sideshow silty clay loam, 0 to 3 percent slopes	Prime farmland if irrigated
98	Sideshow silty clay loam, 3 to 6 percent slopes	Prime farmland if irrigated
99	Simpatico loam, 1 to 3 percent slopes	Prime farmland if irrigated
125	Wetherill loam, 3 to 6 percent slopes	Prime farmland if irrigated
126	Wetherill silt loam, 1 to 3 percent slopes	Prime farmland if irrigated
127	Wetherill silt loam, 3 to 6 percent slopes	Prime farmland if irrigated
131	Yarts fine sandy loam, 1 to 6 percent slopes	Prime farmland if irrigated
9	Battlerock silty clay loam, slightly saline, sodic, 1 to 3 percent slopes	Prime farmland if irrigated and reclaimed of excess salts and sodium

Table 6.--Ecological Sites and Characteristic Native Vegetation

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
1:								
Arabrab---------	Shallow Loamy Mesa Top Pinyon-Juniper	Favorable	900	muttongrass		20	Utah juniper	---
		Normal	700	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	400	Utah juniper		10		
				twoneedle pinyon		10		
				Utah serviceberry		5		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				cliff fendlerbush		5		
				true mountain mahogany		5		
Longburn--------	Shallow Loamy Mesa Top Pinyon-Juniper	Favorable	850	muttongrass		20	---	---
		Normal	600	Indian ricegrass		10		
		Unfavorable	350	Utah juniper		10		
				twoneedle pinyon		10		
				Utah serviceberry		5		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				cliff fendlerbush		5		
				true mountain mahogany		5		
2:								
Awitava---------	Semidesert Juniper Loam	Favorable	500	New Mexico feathergrass	20		Utah juniper	---
		Normal	400	Indian ricegrass	15			
		Unfavorable	300	Utah juniper	10			
				alkali sacaton	10			
				galleta	10			
				Wyoming big sagebrush	5			
				sand dropseed	5			
				shadscale saltbush	5			
				green Mormon tea	2			
3:								
Badland---------	---	Favorable	150				---	---
		Normal	100					
		Unfavorable	50					
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
4:								
Barx----------	Semidesert Loam	Favorable	800	Wyoming big sagebrush	15		---	---
		Normal	700	galleta	15			
		Unfavorable	400	Indian ricegrass	10			
				muttongrass	10			
				New Mexico feathergrass	5			
				blue grama	5			
				fourwing saltbush	5			
				winterfat	5			
				sand dropseed	2			
Gapmesa----------	Semidesert Loam	Favorable	750	New Mexico feathergrass	15		---	---
		Normal	600	galleta	15			
		Unfavorable	450	Indian ricegrass	10			
				Wyoming big sagebrush	10			
				blue grama	5			
				western wheatgrass	5			
				winterfat	2			
5:								
Barx----------	Semidesert Loam	Favorable	800	Wyoming big sagebrush	15		---	---
		Normal	700	galleta	15			
		Unfavorable	400	Indian ricegrass	10			
				muttongrass	10			
				New Mexico feathergrass	5			
				blue grama	5			
				fourwing saltbush	5			
				sand dropseed	5			
				winterfat	2			
6:								
Barx----------	Semidesert Loam	Favorable	800	Wyoming big sagebrush	15		---	---
		Normal	700	galleta	15			
		Unfavorable	400	Indian ricegrass	10			
				muttongrass	10			
				New Mexico feathergrass	5			
				blue grama	5			
				fourwing saltbush	5			
				winterfat	5			
				sand dropseed	2			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
7:								
Battlerock------	Alkali Bottom	Favorable	900	alkali sacaton	25		---	---
		Normal	700	greasewood	15			
		Unfavorable	500	inland saltgrass	15			
				basin big sagebrush	5			
				fourwing saltbush	5			
				galleta	5			
				shadscale saltbush	5			
				western wheatgrass	5			
8:								
Battlerock------	Salt Flats	Favorable	500	alkali sacaton	20		---	---
		Normal	350	fourwing saltbush	10			
		Unfavorable	250	greasewood	10			
				mound saltbush	10			
				basin big sagebrush	5			
				galleta	5			
				inland saltgrass	5			
				shadscale saltbush	5			
				western wheatgrass	5			
9:								
Battlerock------	Alkali Bottom	Favorable	500	alkali sacaton	25		---	---
		Normal	350	greasewood	10			
		Unfavorable	250	fourwing saltbush	5			
				galleta	5			
				inland saltgrass	5			
				shadscale saltbush	5			
				western wheatgrass	5			
10:								
Bebeevar--------	Salt Meadow	Favorable	2500	alkali sacaton	30		---	---
		Normal	2000	galleta	10			
		Unfavorable	1500	inland saltgrass	10			
				fourwing saltbush	5			
				greasewood	5			
				rush	5			
				sedge	5			
				shadscale saltbush	5			
				western wheatgrass	5			
Walrees---------	Salt Meadow	Favorable	2500	alkali sacaton	30		---	---
		Normal	2000	galleta	10			
		Unfavorable	1500	inland saltgrass	10			
				fourwing saltbush	5			
				greasewood	5			
				rush	5			
				sedge	5			
				shadscale saltbush	5			
				western wheatgrass	5			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
11:								
Benally----------	Alkali Flat	Favorable	1000	alkali sacaton	25		---	---
		Normal	800	galleta	10			
		Unfavorable	550	shadscale saltbush	10			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				sand dropseed	5			
				winterfat	3			
12:								
Blackston-------	Alkali Flat	Favorable	1000	Indian ricegrass	25		---	---
		Normal	800	shadscale saltbush	20			
		Unfavorable	500	galleta	15			
				bottlebrush squirreltail	10			
				fourwing saltbush	10			
Camac-----------	Saltdesert Breaks	Favorable	450	galleta	20		---	---
		Normal	350	shadscale saltbush	15			
		Unfavorable	250	Indian ricegrass	10			
				Salina wildrye	10			
				bottlebrush squirreltail	10			
				alkali sacaton	5			
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
13:								
Bluechief-------	Sandy Saltdesert	Favorable	700	shadscale saltbush	15		---	---
		Normal	500	Indian ricegrass	10			
		Unfavorable	275	sand dropseed	10			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				galleta	5			
				green Mormon tea	3			
				scarlet globemallow	3			
				pale wolfberry	2			
				spiny hopsage	2			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
14:								
Bluechief--------	Sandy Saltdesert	Favorable	700	shadscale saltbush	15		---	---
		Normal	500	Indian ricegrass	10			
		Unfavorable	275	sand dropseed	10			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				galleta	5			
				green Mormon tea	3			
				scarlet globemallow	3			
				pale wolfberry	2			
				spiny hopsage	2			
15:								
Bluechief--------	Sandy Saltdesert	Favorable	700	shadscale saltbush	15		---	---
		Normal	500	Indian ricegrass	10			
		Unfavorable	275	sand dropseed	10			
				spiny hopsage	10			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				galleta	5			
				green Mormon tea	5			
				pale wolfberry	3			
				scarlet globemallow	3			
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
16:								
Cahona----------	Loamy Mesa Top Pinyon-Juniper	Favorable	800	Utah juniper		25	Utah juniper	---
		Normal	600	muttongrass		20	twoneedle pinyon	---
		Unfavorable	400	twoneedle pinyon		20		
				Indian ricegrass		5		
				antelope bitterbrush		2		
				bottlebrush squirreltail		2		
				needleandthread		2		
				true mountain mahogany		2		
				green Mormon tea		1		
Pulpit----------	Loamy Mesa Top Pinyon-Juniper	Favorable	800	Utah juniper		25	Utah juniper	---
		Normal	600	muttongrass		20	twoneedle pinyon	---
		Unfavorable	400	twoneedle pinyon		20		
				antelope bitterbrush		2		
				bottlebrush squirreltail		2		
				needleandthread		2		
				true mountain mahogany		2		
				green Mormon tea		1		

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
17:								
Cahona----------	Southwestern Mountain Pinyon-Juniper	Favorable	900	muttongrass		15	Utah juniper	---
		Normal	800	twoneedle pinyon		15	twoneedle pinyon	---
		Unfavorable	700	Indian ricegrass		10		
				Wyoming big sagebrush		10		
				mountain mahogany		10		
				Gambel oak		5		
				bottlebrush squirreltail		5		
				Utah serviceberry		3		
				antelope bitterbrush		3		
				mountain snowberry		3		
				Utah juniper		2		
				yucca		2		
Zigzag----------	Southwestern Mountain Pinyon-Juniper	Favorable	900	muttongrass		15	Utah juniper	---
		Normal	800	twoneedle pinyon		15	twoneedle pinyon	---
		Unfavorable	700	Indian ricegrass		10		
				Wyoming big sagebrush		10		
				mountain mahogany		10		
				Gambel oak		5		
				bottlebrush squirreltail		5		
				Utah serviceberry		3		
				antelope bitterbrush		3		
				mountain snowberry		3		
				Utah juniper		2		
				yucca		2		
18:								
Camac----------	Saltdesert Breaks	Favorable	500	galleta	20		---	---
		Normal	350	shadscale saltbush	15			
		Unfavorable	200	Indian ricegrass	10			
				bottlebrush squirreltail	10			
				Salina wildrye	5			
				alkali sacaton	5			
Kimbeto----------	Alkali Flat	Favorable	1000	Indian ricegrass	25		---	---
		Normal	800	galleta	15			
		Unfavorable	550	shadscale saltbush	15			
				bottlebrush squirreltail	10			
				fourwing saltbush	10			
Badland----------	---	Favorable	150				---	---
		Normal	100					
		Unfavorable	50					

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
19:								
Chimrock--------	Alkali Flat	Favorable	1000	alkali sacaton	25		---	---
		Normal	800	galleta	15			
		Unfavorable	550	shadscale saltbush	10			
				Gardner's saltbrush	5			
				Indian ricegrass	5			
				winterfat	5			
				fourwing saltbush	3			
				scarlet globemallow	2			
20:								
Chimrock--------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	shadscale saltbush	10			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				winterfat	5			
				fourwing saltbush	3			
				scarlet globemallow	2			
21:								
Claysprings-----	Saltdesert Breaks	Favorable	500	galleta	30		---	---
		Normal	350	green Mormon tea	15			
		Unfavorable	200	shadscale saltbush	15			
				Indian ricegrass	10			
				alkali sacaton	10			
				Salina wildrye	5			
				bottlebrush squirreltail	5			
Badland---------	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
22:								
Claysprings-----	Saltdesert Breaks	Favorable	500	galleta	20		---	---
		Normal	350	shadscale saltbush	20			
		Unfavorable	200	Salina wildrye	15			
				alkali sacaton	10			
				Indian ricegrass	5			
				Utah juniper	5			
				Wyoming big sagebrush	5			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
23:								
Cowboy----------	Alkali Bottom	Favorable	500	alkali sacaton	25		---	---
		Normal	350	greasewood	10			
		Unfavorable	250	mound saltbush	10			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				galleta	5			
				shadscale saltbush	5			
				western wheatgrass	5			
				scarlet globemallow	3			
24:								
Cowboy----------	Alkali Flat	Favorable	1000	alkali sacaton	25		---	---
		Normal	800	galleta	15			
		Unfavorable	550	shadscale saltbush	15			
				Gardner's saltbrush	5			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
Kava----------	Alkali Flat	Favorable	1000	alkali sacaton	25		---	---
		Normal	800	galleta	15			
		Unfavorable	550	shadscale saltbush	10			
				Gardner's saltbrush	5			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				mat saltbush	5			
25:								
Cowboy----------	Clayey Saltdesert	Favorable	500	Gardner's saltbrush	30		---	---
		Normal	350	galleta	15			
		Unfavorable	200	shadscale saltbush	10			
				Indian ricegrass	5			
				alkali sacaton	5			
				bottlebrush squirreltail	5			
				mat saltbush	5			
				mound saltbush	5			
Kava----------	Clayey Saltdesert	Favorable	500	Gardner's saltbrush	30		---	---
		Normal	350	galleta	15			
		Unfavorable	200	shadscale saltbush	10			
				Indian ricegrass	5			
				alkali sacaton	5			
				bottlebrush squirreltail	5			
				mat saltbush	5			
				mound saltbush	5			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
26:								
Decorock--------	Saltdesert Breaks	Favorable	500	galleta	25		---	---
		Normal	350	shadscale saltbush	20			
		Unfavorable	200	alkali sacaton	15			
				Indian ricegrass	10			
				bottlebrush squirreltail	10			
				winterfat	5			
Salamander------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	shadscale saltbush	10			
				Indian ricegrass	5			
				fourwing saltbush	5			
				winterfat	5			
				snakeweed	3			
				green Mormon tea	1			
				scarlet globemallow	1			
27:								
Decorock--------	Saltdesert Breaks	Favorable	500	galleta	25		---	---
		Normal	350	alkali sacaton	15			
		Unfavorable	200	shadscale saltbush	15			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				winterfat	5			
Salamander------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	shadscale saltbush	10			
				Indian ricegrass	5			
				fourwing saltbush	5			
				winterfat	5			
				snakeweed	3			
				green Mormon tea	1			
				scarlet globemallow	1			
Badland---------	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
28:								
Dolcan----------	Shallow Clay Loam Pinyon Juniper	Favorable	450	Indian ricegrass		15	Utah juniper	---
		Normal	350	Utah juniper		15	twoneedle pinyon	---
		Unfavorable	250	mountain mahogany		15		
				twoneedle pinyon		15		
				galleta		10		
				Utah serviceberry		5		
				common snowberry		5		
				muttongrass		5		
				western wheatgrass		5		
Kucu----------	Shallow Loamy Mesa Top Pinyon-Juniper	Favorable	600	muttongrass		20	Utah juniper	---
		Normal	450	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	300	Utah juniper		10		
				twoneedle pinyon		10		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				needleandthread		5		
				true mountain mahogany		5		
29:								
Elias----------	Alkali Bottom	Favorable	500	alkali sacaton	20		---	---
		Normal	350	galleta	15			
		Unfavorable	250	greasewood	15			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				shadscale saltbush	5			
				winterfat	5			
Yarts----------	Semidesert Loam	Favorable	800	Wyoming big sagebrush	20		---	---
		Normal	600	Indian ricegrass	10			
		Unfavorable	400	galleta	10			
				muttongrass	10			
				New Mexico feathergrass	5			
				fourwing saltbush	5			
				winterfat	5			
				sand dropseed	2			
30:								
Farb----------	Shallow Desert	Favorable	550	New Mexico feathergrass	20		---	---
		Normal	400	Indian ricegrass	15			
		Unfavorable	275	galleta	15			
				fourwing saltbush	5			
				green Mormon tea	5			
				needleandthread	5			
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
31:								
Farb----------	Shallow Desert	Favorable	550	Indian ricegrass	15		Utah juniper	---
		Normal	400	galleta	15			
		Unfavorable	300	bottlebrush squirreltail	10			
				needleandthread	10			
				shadscale saltbush	10			
				Salina wildrye	5			
				green Mormon tea	5			
				Utah juniper	3			
				skunkbush sumac	3			
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Fruitland-------	Sandy Saltdesert	Favorable	700	needleandthread	20		---	---
		Normal	500	Indian ricegrass	10			
		Unfavorable	300	sand dropseed	10			
				shadscale saltbush	10			
				Douglas rabbitbrush	5			
				bottlebrush squirreltail	5			
				galleta	5			
				winterfat	5			
32:								
Fardraw---------	Pine Grasslands	Favorable	1200	Arizona fescue	20		ponderosa pine	---
		Normal	900	Parry's Oatgrass	20			
		Unfavorable	750	mountain muhly	15			
				ponderosa pine	15			
				Gambel oak	5			
				bottlebrush squirreltail	5			
				Rocky Mountain juniper	2			
33:								
Farview---------	Shallow Desert	Favorable	550	Indian ricegrass	15		Utah juniper	20
		Normal	400	Utah juniper	15		twoneedle pinyon	---
		Unfavorable	300	Salina wildrye	10			
				fourwing saltbush	10			
				needleandthread	10			
				twoneedle pinyon	10			
				cliffrose	5			
				galleta	5			
				shadscale saltbush	5			
				broom snakeweed	3			
				green Mormon tea	3			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
33:								
Beclabito--------	Semidesert Juniper Loam	Favorable	600	Indian ricegrass		10	Utah juniper	---
		Normal	450	Utah juniper		10	twoneedle pinyon	---
		Unfavorable	300	Wyoming big sagebrush		10		
				galleta		10		
				prairie Junegrass		10		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				needleandthread		5		
				twoneedle pinyon		3		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
34:								
Farview----------	Shallow Desert	Favorable	550	Indian ricegrass	15		Utah juniper	20
		Normal	400	Utah juniper	15		twoneedle pinyon	---
		Unfavorable	300	Salina wildrye	10			
				fourwing saltbush	10			
				needleandthread	10			
				twoneedle pinyon	10			
				cliffrose	5			
				galleta	5			
				shadscale saltbush	5			
				green Mormon tea	3			
				singleleaf ash	2			
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
35:								
Fluvents---------	Salt Flats	Favorable	2500	alkali sacaton	30		---	---
		Normal	2000	inland saltgrass	10			
		Unfavorable	1500	rush	10			
				sedge	10			
				western wheatgrass	5			
Fluvaquents------	Salt Flats	Favorable	2500	western wheatgrass	20		---	---
		Normal	2000	alkali sacaton	15			
		Unfavorable	1500	inland saltgrass	10			
				rush	10			
				sedge	10			
				greasewood	5			
				willow	5			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
36:								
Gladel----------	Shallow Loamy Mesa Top Pinyon-Juniper	Favorable	600	muttongrass		20	twoneedle pinyon	30
		Normal	450	Indian ricegrass		10	Utah juniper	---
		Unfavorable	300	Utah juniper		10		
				twoneedle pinyon		10		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				needleandthread		5		
				true mountain mahogany		5		
Pulpit----------	Loamy Mesa Top Pinyon-Juniper	Favorable	800	muttongrass		20	Utah juniper	---
		Normal	600	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	400	Utah juniper		10		
				twoneedle pinyon		10		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				needleandthread		5		
				true mountain mahogany		5		
37:								
Greycap---------	Basin Shale	Favorable	600	galleta	15		---	---
		Normal	400	black sagebrush	10			
		Unfavorable	300	western wheatgrass	10			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				shadscale saltbush	5			
				winterfat	5			
				dwarf rabbitbrush	2			
Nomad-----------	Alkali Flat	Favorable	800	alkali sacaton	20		---	---
		Normal	650	galleta	15			
		Unfavorable	450	bottlebrush squirreltail	10			
				shadscale saltbush	10			
				winterfat	10			
				Indian ricegrass	5			
				snakeweed	5			
				scarlet globemallow	2			
38:								
Gypsey----------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	bottlebrush squirreltail	10			
				shadscale saltbush	10			
				Indian ricegrass	5			
				snakeweed	5			
				winterfat	5			
				scarlet globemallow	2			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
39:								
Gypsey----------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	bottlebrush squirreltail	10			
				shadscale saltbush	10			
				Indian ricegrass	5			
				snakeweed	5			
				winterfat	5			
				scarlet globemallow	2			
40:								
Herm----------	Brushy Loam	Favorable	3000	Gambel oak	20		---	---
		Normal	2000	Rocky Mountain juniper	15			
		Unfavorable	1500	Utah serviceberry	10			
				twoneedle pinyon	10			
				Letterman needlegrass	5			
				common chokecherry	5			
				common snowberry	5			
				muttongrass	5			
				Rocky Mountain maple	3			
				kinnikinnick	3			
41:								
Hope----------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	shadscale saltbush	10			
				Gardner's saltbrush	5			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				needleandthread	3			
42:								
Hoskay----------	Alkali Flat	Favorable	1000	galleta	40		---	---
		Normal	800	Indian ricegrass	10			
		Unfavorable	550	shadscale saltbush	10			
				Gardner's saltbrush	5			
				bottlebrush squirreltail	5			
Patel----------	Silty Saltdesert	Favorable	650	galleta	30		---	---
		Normal	575	shadscale saltbush	15			
		Unfavorable	400	Indian ricegrass	10			
				Gardner's saltbrush	5			
				alkali sacaton	5			
				bottlebrush squirreltail	5			
Badland---------	---	Favorable	150				---	---
		Normal	100					
		Unfavorable	50					

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
43:								
Ives----------	Alkali Bottom	Favorable	500	alkali sacaton	25		---	---
		Normal	350	greasewood	10			
		Unfavorable	250	Indian ricegrass	5			
				fourwing saltbush	5			
				galleta	5			
				shadscale saltbush	5			
				scarlet globemallow	3			
44:								
Jeddito---------	Salt Meadow	Favorable	2500	alkali sacaton	20		---	---
		Normal	2000	inland saltgrass	20			
		Unfavorable	1500	rush	10			
				sedge	10			
				western wheatgrass	10			
				bottlebrush squirreltail	5			
				greasewood	5			
Escavada--------	Salt Meadow	Favorable	2500	alkali sacaton	20		---	---
		Normal	2000	inland saltgrass	20			
		Unfavorable	1500	rush	10			
				sedge	10			
				western wheatgrass	10			
				bottlebrush squirreltail	5			
				greasewood	5			
45:								
Jeddito---------	Alkali Bottom	Favorable	500	alkali sacaton	20		---	---
		Normal	350	sand dropseed	10			
		Unfavorable	250	fourwing saltbush	5			
				galleta	5			
				greasewood	5			
				inland saltgrass	5			
46:								
Juanalo---------	Alkali Flat	Favorable	550	New Mexico feathergrass	20		---	---
		Normal	400	alkali sacaton	20			
		Unfavorable	275	galleta	15			
				bottlebrush squirreltail	10			
				Indian ricegrass	5			
				fourwing saltbush	5			
				green Mormon tea	5			
				needleandthread	5			
				shadscale saltbush	5			
				sand dropseed	3			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
47:								
Katzine---------	Southwestern Mountain Pinyon-Juniper	Favorable	900	Utah juniper		15	Utah juniper	---
		Normal	800	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	700	muttongrass		10		
				twoneedle pinyon		10		
				Wyoming big sagebrush		5		
				bottlebrush squirreltail		5		
				cliffrose		5		
				galleta		5		
				antelope bitterbrush		3		
48:								
Lazear----------	Shallow Loamy Mesa Top Pinyon-Juniper	Favorable	600	Salina wildrye		15	Utah juniper	60
		Normal	500	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	400	Utah juniper		10		
				muttongrass		10		
				twoneedle pinyon		10		
				Wyoming big sagebrush		5		
				antelope bitterbrush		5		
				cliffrose		5		
				true mountain mahogany		3		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
49:								
Lillings--------	Alkali Bottom	Favorable	1000	alkali sacaton	25		---	---
		Normal	700	greasewood	15			
		Unfavorable	500	inland saltgrass	15			
				basin big sagebrush	5			
				fourwing saltbush	5			
				galleta	5			
				saltbush	5			
				western wheatgrass	5			
50:								
Littlehat-------	Clayey Saltdesert	Favorable	500	mat saltbush	50		---	---
		Normal	350	Indian ricegrass	5			
		Unfavorable	200	alkali sacaton	5			
				bottlebrush squirreltail	5			
				galleta	5			
				shadscale saltbush	5			
Persayo---------	Silty Saltdesert	Favorable	650	Indian ricegrass	15		---	---
		Normal	575	galleta	10			
		Unfavorable	400	Gardner's saltbrush	5			
				bud sagebrush	5			
				shadscale saltbush	5			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
50:								
Badland---------	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
51:								
Littlehat-------	Clayey Saltdesert	Favorable	500	mat saltbush	50		---	---
		Normal	350	Indian ricegrass	5			
		Unfavorable	200	alkali sacaton	5			
				bottlebrush squirreltail	5			
				galleta	5			
				shadscale saltbush	5			
Persayo---------	Silty Saltdesert	Favorable	650	galleta	30		---	---
		Normal	575	Indian ricegrass	10			
		Unfavorable	400	Gardner's saltbrush	5			
				bud sagebrush	5			
				shadscale saltbush	5			
Nataani---------	Alkali Flat	Favorable	800	galleta	30		---	---
		Normal	700	Gardner's saltbrush	10			
		Unfavorable	500	Indian ricegrass	10			
				shadscale saltbush	10			
				alkali sacaton	5			
				bottlebrush squirreltail	5			
52:								
Littlewater-----	Abies concolor-Pseudotsuga menziesii/Quercus gambelii-Symphoricarpos albus/Festuca arizonica-Carex nova	Favorable	1000	Gambel oak		15	Douglas-fir	---
		Normal	850	Douglas-fir		10	ponderosa pine	---
		Unfavorable	700	Utah serviceberry		10		
				Letterman needlegrass		5		
				common chokecherry		5		
				common snowberry		5		
				mountain brome		5		
				Rocky Mountain maple		3		
				kinnikinnick		3		
Rubbleland------	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
53:								
Longburn--------	Shallow Loamy Mesa Top Pinyon-Juniper	Favorable	850	muttongrass		20	Utah juniper	---
		Normal	600	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	350	Utah juniper		10		
				twoneedle pinyon		10		
				Utah serviceberry		5		
				antelope bitterbrush		5		
				cliff fendlerbush		5		
				true mountain mahogany		5		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
54:								
Longburn--------	Shallow Loamy Mesa Top Pinyon-Juniper	Favorable	850	muttongrass		20	Utah juniper	---
		Normal	600	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	350	Utah juniper		10		
				twoneedle pinyon		10		
				Utah serviceberry		5		
				antelope bitterbrush		5		
				cliff fendlerbush		5		
				true mountain mahogany		5		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
55:								
Mack------------	Alkali Flat	Favorable	800	alkali sacaton	20		---	---
		Normal	700	galleta	15			
		Unfavorable	500	Indian ricegrass	10			
				greasewood	10			
				fourwing saltbush	5			
				scarlet globemallow	5			
				shadscale saltbush	5			
56:								
Mack------------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	shadscale saltbush	10			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				sand dropseed	5			
				fourwing saltbush	3			
				snakeweed	3			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
57:								
Mack----------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	shadscale saltbush	10			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				sand dropseed	5			
				fourwing saltbush	3			
				snakeweed	3			
58:								
Mariano----------	Sandy Saltdesert	Favorable	700	shadscale saltbush	15		---	---
		Normal	500	Indian ricegrass	10			
		Unfavorable	275	sand dropseed	10			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				galleta	5			
				green Mormon tea	3			
				scarlet globemallow	3			
				pale wolfberry	2			
				spiny hopsage	2			
59:								
Mariano----------	Sandy Saltdesert	Favorable	700	shadscale saltbush	15		---	---
		Normal	500	Indian ricegrass	10			
		Unfavorable	275	sand dropseed	10			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				galleta	5			
				green Mormon tea	3			
				scarlet globemallow	3			
				pale wolfberry	2			
				spiny hopsage	2			
60:								
Mariano----------	Sandy Saltdesert	Favorable	700	shadscale saltbush	15		---	---
		Normal	500	Indian ricegrass	10			
		Unfavorable	300	sand dropseed	10			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				galleta	5			
				green Mormon tea	3			
				scarlet globemallow	3			
				pale wolfberry	2			
				spiny hopsage	2			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
61:								
Mikett----------	Salt Meadow	Favorable	1800	alkali sacaton	40		---	---
		Normal	1600	inland saltgrass	10			
		Unfavorable	1200	sedge	10			
				western wheatgrass	10			
				Baltic rush	5			
				greasewood	5			
				rubber rabbitbrush	5			
62:								
Mikett----------	Salt Meadow	Favorable	2000	alkali sacaton	30		---	---
		Normal	1600	inland saltgrass	10			
		Unfavorable	1200	rush	10			
				sedge	10			
				western wheatgrass	10			
				fourwing saltbush	5			
				greasewood	5			
				rabbitbrush	5			
63:								
Mikim----------	Alkali Flat	Favorable	875	alkali sacaton	25		---	---
		Normal	625	galleta	10			
		Unfavorable	450	big sagebrush	5			
				fourwing saltbush	5			
				shadscale saltbush	5			
				western wheatgrass	5			
64:								
Mikim----------	Alkali Flat	Favorable	875	alkali sacaton	25		---	---
		Normal	625	galleta	10			
		Unfavorable	450	big sagebrush	5			
				fourwing saltbush	5			
				shadscale saltbush	5			
				western wheatgrass	5			
65:								
Monierco--------	Saltdesert Breaks	Favorable	500	galleta	20		---	---
		Normal	350	shadscale saltbush	20			
		Unfavorable	200	alkali sacaton	15			
				Indian ricegrass	5			
				Salina wildrye	5			
				bottlebrush squirreltail	5			
				needleandthread	5			
				winterfat	5			
				green Mormon tea	2			
				Utah juniper	1			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
66:								
Morefield-------	Loamy Mesa Top Pinyon-Juniper	Favorable	1400	muttongrass		20	Utah juniper	---
		Normal	1100	Wyoming big sagebrush		15	twoneedle pinyon	---
		Unfavorable	700	Indian ricegrass		10		
				Utah juniper		10		
				twoneedle pinyon		10		
				Yucca		5		
				antelope bitterbrush		5		
				true mountain mahogany		5		
67:								
Morefield-------	Loamy Mesa Top Pinyon-Juniper	Favorable	1400	muttongrass		20	Utah juniper	---
		Normal	1100	Wyoming big sagebrush		15	twoneedle pinyon	---
		Unfavorable	700	Indian ricegrass		10		
				Utah juniper		10		
				twoneedle pinyon		10		
				Yucca		5		
				antelope bitterbrush		5		
				true mountain mahogany		5		
68:								
Nataani---------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	bottlebrush squirreltail	10			
				Indian ricegrass	5			
				fourwing saltbush	5			
				shadscale saltbush	5			
				needleandthread	3			
				sand dropseed	3			
				Wyoming big sagebrush	2			
Yogovuci--------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	bottlebrush squirreltail	10			
				Indian ricegrass	5			
				fourwing saltbush	5			
				shadscale saltbush	5			
				needleandthread	3			
				sand dropseed	3			
				Wyoming big sagebrush	2			
69:								
Oagamati--------	Clayey Saltdesert	Favorable	400	Gardner's saltbrush	30		---	---
		Normal	350	shadscale saltbush	20			
		Unfavorable	200	galleta	10			
				Indian ricegrass	5			
				alkali sacaton	5			
				bottlebrush squirreltail	5			
				mat saltbush	5			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
70:								
Pagayvay--------	Southwestern Mountain Pinyon-Juniper	Favorable	900	Utah juniper		10	Utah juniper	---
		Normal	800	Wyoming big sagebrush		10		
		Unfavorable	700	muttongrass		10		
				Indian ricegrass		5		
				cliffrose		5		
				galleta		5		
				needleandthread		5		
				bottlebrush squirreltail		3		
				skyrocket gilia		2		
71:								
Persayo---------	Silty Saltdesert	Favorable	650	galleta	30		---	---
		Normal	575	shadscale saltbush	15			
		Unfavorable	400	Indian ricegrass	10			
				Gardner's saltbrush	5			
				bottlebrush squirreltail	5			
Cairn----------	Alkali Flat	Favorable	1000	galleta	30		---	---
		Normal	800	Indian ricegrass	10			
		Unfavorable	550	shadscale saltbush	10			
				Gardner's saltbrush	5			
				bottlebrush squirreltail	5			
Patel----------	Silty Saltdesert	Favorable	650	galleta	30		---	---
		Normal	575	shadscale saltbush	15			
		Unfavorable	400	Indian ricegrass	10			
				Gardner's saltbrush	5			
				bottlebrush squirreltail	5			
72:								
Persayo---------	Saltdesert Breaks	Favorable	500	galleta	25		---	---
		Normal	250	alkali sacaton	15			
		Unfavorable	200	shadscale saltbush	15			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				winterfat	5			
73:								
Persayo---------	Clayey Saltdesert	Favorable	500	Gardner's saltbrush	25		---	---
		Normal	350	shadscale saltbush	20			
		Unfavorable	200	galleta	15			
				Indian ricegrass	5			
				alkali sacaton	5			
				bottlebrush squirreltail	5			
				mat saltbush	5			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
74:								
Persayo----------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	shadscale saltbush	10			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				winterfat	5			
				needleandthread	3			
				sand dropseed	2			
Yogovuci--------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	shadscale saltbush	10			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				sand dropseed	2			
75:								
Picliff----------	Alkali Flat	Favorable	1000	alkali sacaton	25		---	---
		Normal	850	galleta	15			
		Unfavorable	500	shadscale saltbush	10			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				basin big sagebrush	2			
				winterfat	2			
76:								
Pogo------------	Wet Meadow	Favorable	4000	broadleaf cattail	25		---	---
		Normal	3000	sedge	25			
		Unfavorable	2000	rush	15			
				inland saltgrass	10			
77:								
Prater----------	Steep Shallow Clay Loam Pinyon-Juniper	Favorable	1200	Salina wildrye		20	Utah juniper	---
		Normal	1000	Utah juniper		15	twoneedle pinyon	---
		Unfavorable	800	twoneedle pinyon		15		
				Indian ricegrass		10		
				Wyoming big sagebrush		10		
				muttongrass		10		
				antelope bitterbrush		5		
				cliffrose		5		
				true mountain mahogany		3		

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
77:								
Dolcan----------	Steep Shallow Clay Loam Pinyon-Juniper	Favorable	700	Salina wildrye		20	Utah juniper	---
		Normal	500	Utah juniper		15	twoneedle pinyon	---
		Unfavorable	400	twoneedle pinyon		15		
				Indian ricegrass		10		
				muttongrass		10		
				Wyoming big sagebrush		5		
				antelope bitterbrush		5		
				cliffrose		5		
				true mountain mahogany		3		
78:								
Pulpit----------	Loamy Mesa Top Pinyon-Juniper	Favorable	1125	muttongrass		20	Utah juniper	---
		Normal	800	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	600	Utah juniper		10		
				Wyoming big sagebrush		10		
				twoneedle pinyon		10		
				antelope bitterbrush		5		
				cliffrose		5		
				prairie junegrass		5		
				rabbitbrush		5		
79:								
Ramper----------	Loamy Bottom	Favorable	1200	western wheatgrass	20		---	---
		Normal	900	basin big sagebrush	15			
		Unfavorable	700	slender wheatgrass	15			
				bottlebrush squirreltail	10			
				Indian ricegrass	5			
				rubber rabbitbrush	5			
80:								
Ravola----------	Alkali Bottom	Favorable	800	alkali sacaton	25		---	---
		Normal	600	greasewood	15			
		Unfavorable	400	inland saltgrass	10			
				basin big sagebrush	5			
				fourwing saltbush	5			
				galleta	5			
				western wheatgrass	5			
81:								
Ravola----------	Alkali Bottom	Favorable	500	alkali sacaton	25		---	---
		Normal	350	galleta	10			
		Unfavorable	250	Gardner's saltbrush	5			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				greasewood	5			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
82:								
Ravola----------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	bottlebrush squirreltail	10			
				green Mormon tea	10			
				shadscale saltbush	10			
				Indian ricegrass	5			
83:								
Redlands--------	Sandy Saltdesert	Favorable	700	shadscale saltbush	15		---	---
		Normal	500	Indian ricegrass	10			
		Unfavorable	300	sand dropseed	10			
				bottlebrush squirreltail	5			
				galleta	5			
				green Mormon tea	3			
				pale wolfberry	3			
				scarlet globemallow	3			
				spiny hopsage	3			
				fourwing saltbush	2			
84:								
Redlands--------	Sandy Saltdesert	Favorable	700	shadscale saltbush	15		---	---
		Normal	500	Indian ricegrass	10			
		Unfavorable	300	sand dropseed	10			
				bottlebrush squirreltail	5			
				galleta	5			
				green Mormon tea	3			
				pale wolfberry	3			
				scarlet globemallow	3			
				spiny hopsage	3			
				fourwing saltbush	2			
85:								
Rizno----------	Southwestern Mountain Pinyon-Juniper	Favorable	650	muttongrass		15	Utah juniper	---
		Normal	500	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	350	Utah juniper		10		
				Wyoming big sagebrush		10		
				galleta		10		
				twoneedle pinyon		10		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				needleandthread		5		

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
85:								
Gapmesa----------	Southwestern Mountain Pinyon-Juniper	Favorable	750	muttongrass		15	Utah juniper	---
		Normal	600	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	450	Utah juniper		10		
				Wyoming big sagebrush		10		
				galleta		10		
				twoneedle pinyon		10		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				needleandthread		5		
86:								
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
87:								
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Farview----------	Shallow Desert	Favorable	550	Indian ricegrass	15		Utah juniper	---
		Normal	400	Utah juniper	15		twoneedle pinyon	---
		Unfavorable	275	Salina wildrye	10			
				fourwing saltbush	10			
				needleandthread	10			
				twoneedle pinyon	10			
				Wyoming big sagebrush	5			
				bottlebrush squirreltail	5			
				cliffrose	5			
				galleta	5			
				green Mormon tea	5			
				shadscale saltbush	5			
				singleleaf ash	2			
88:								
Romberg----------	Shallow Clay Loam Pinyon Juniper	Favorable	500	Indian ricegrass		15	Utah juniper	---
		Normal	350	mountain mahogany		15	twoneedle pinyon	---
		Unfavorable	200	Utah juniper		10		
				galleta		10		
				twoneedle pinyon		10		
				western wheatgrass		10		
				Utah serviceberry		5		
				common snowberry		5		
				muttongrass		5		
				pinyon ricegrass		5		

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
88:								
Crosscan--------	Shallow Clay Loam Pinyon Juniper	Favorable	300	Indian ricegrass		15	Utah juniper	---
		Normal	200	mountain mahogany		15	twoneedle pinyon	---
		Unfavorable	100	Utah juniper		10		
				galleta		10		
				twoneedle pinyon		10		
				western wheatgrass		10		
				Utah serviceberry		5		
				common snowberry		5		
				muttongrass		5		
				pinyon ricegrass		5		
89:								
Romberg---------	Steep Shallow Clay Loam Pinyon-Juniper	Favorable	400	Indian ricegrass		15	Utah juniper	---
		Normal	300	mountain mahogany		15	twoneedle pinyon	---
		Unfavorable	200	Utah juniper		10		
				galleta		10		
				twoneedle pinyon		10		
				western wheatgrass		10		
				Utah serviceberry		5		
				common snowberry		5		
				muttongrass		5		
				pinyon ricegrass		5		
Crosscan--------	Steep Shallow Clay Loam Pinyon-Juniper	Favorable	300	Indian ricegrass		15	Utah juniper	---
		Normal	200	mountain mahogany		15	twoneedle pinyon	---
		Unfavorable	100	Utah juniper		10		
				galleta		10		
				twoneedle pinyon		10		
				western wheatgrass		10		
				Utah serviceberry		5		
				common snowberry		5		
				muttongrass		5		
				pinyon ricegrass		5		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
90:								
Roubideau-------	Loamy Mesa Top Pinyon-Juniper	Favorable	1300	muttongrass		20	Utah juniper	---
		Normal	1000	mountain big sagebrush		15	twoneedle pinyon	---
		Unfavorable	700	Indian ricegrass		10		
				Utah juniper		5		
				Yucca		5		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				true mountain mahogany		5		
				twoneedle pinyon		5		

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
91:								
Sharps----------	Semidesert Loam	Favorable	750	galleta	20		Utah juniper	---
		Normal	600	New Mexico feathergrass	15		twoneedle pinyon	---
		Unfavorable	450	Wyoming big sagebrush	15			
				Indian ricegrass	10			
				blue grama	5			
				bottlebrush squirreltail	5			
				rubber rabbitbrush	5			
				western wheatgrass	5			
92:								
Sharps----------	Semidesert Loam	Favorable	750	galleta	20		Utah juniper	---
		Normal	600	New Mexico feathergrass	15		twoneedle pinyon	---
		Unfavorable	450	Wyoming big sagebrush	15			
				Indian ricegrass	10			
				blue grama	5			
				bottlebrush squirreltail	5			
				rubber rabbitbrush	5			
				western wheatgrass	5			
Gapmesa----------	Semidesert Loam	Favorable	750	galleta	20		Utah juniper	---
		Normal	600	New Mexico feathergrass	15		twoneedle pinyon	---
		Unfavorable	450	Wyoming big sagebrush	15			
				Indian ricegrass	10			
				blue grama	5			
				bottlebrush squirreltail	5			
				rabbitbrush	5			
				western wheatgrass	5			
93:								
Sheek----------	Ponderosa Pine	Favorable	600	Gambel oak		15	ponderosa pine	75
		Normal	400	Arizona fescue		10	twoneedle pinyon	---
		Unfavorable	350	mountain muhly		10	Rocky Mountain juniper	---
				prairie Junegrass		10		
				western wheatgrass		10		
				Rocky Mountain juniper		5		
				Utah serviceberry		5		
				antelope bitterbrush		5		
				mountain brome		5		
				mountain mahogany		5		
				ponderosa pine		5		
				serviceberry		5		
				snowberry		5		
				muttongrass		2		

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
93:								
Archuleta-------	Ponderosa Pine	Favorable	500	Gambel oak		15	ponderosa pine	45
		Normal	350	Arizona fescue		10	Rocky Mountain Douglas fir	---
		Unfavorable	300	mountain muhly		10		
				prairie Junegrass		10		
				western wheatgrass		10		
				Rocky Mountain juniper		5		
				antelope bitterbrush		5		
				mountain brome		5		
				mountain mahogany		5		
				serviceberry		5		
				snowberry		5		
94:								
Sheek-----------	Ponderosa Pine	Favorable	600	Gambel oak		15	ponderosa pine	75
		Normal	400	Arizona fescue		10	twoneedle pinyon	---
		Unfavorable	350	Douglas-fir		10	Rocky Mountain juniper	---
				mountain muhly		10		
				ponderosa pine		10		
				prairie Junegrass		10		
				antelope bitterbrush		5		
				mountain brome		5		
				mountain mahogany		5		
				serviceberry		5		
				snowberry		5		
				western wheatgrass		5		
Archuleta-------	Ponderosa Pine	Favorable	500	Gambel oak		15	ponderosa pine	45
		Normal	350	Arizona fescue		10	Rocky Mountain Douglas fir	---
		Unfavorable	300	Douglas-fir		10		
				mountain muhly		10		
				ponderosa pine		10		
				prairie Junegrass		10		
				western wheatgrass		10		
				antelope bitterbrush		5		
				mountain brome		5		
				mountain mahogany		5		
				serviceberry		5		
				snowberry		5		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
95:								
Sheek----------	Abies concolor-Pseudotsuga menziesii/Quercus gambelii-Symphoricarpos albus/Festuca arizonica-Carex nova	Favorable	700	Douglas-fir		20	Rocky Mountain Douglas fir	75
		Normal	550	Gambel oak		15	ponderosa pine	75
		Unfavorable	450	Arizona fescue		10		
				antelope bitterbrush		5		
				mountain brome		5		
				mountain mahogany		5		
				mountain muhly		5		
				ponderosa pine		5		
				prairie Junegrass		5		
				serviceberry		5		
				snowberry		5		
				western wheatgrass		5		
Archuleta-------	Abies concolor-Pseudotsuga menziesii/Quercus gambelii-Symphoricarpos albus/Festuca arizonica-Carex nova	Favorable	600	Douglas-fir		20	Rocky Mountain Douglas fir	---
		Normal	500	Gambel oak		15	ponderosa pine	45
		Unfavorable	400	Arizona fescue		5		
				Parry's Oatgrass		5		
				antelope bitterbrush		5		
				mountain brome		5		
				mountain mahogany		5		
				mountain muhly		5		
				ponderosa pine		5		
				prairie Junegrass		5		
				serviceberry		5		
				snowberry		5		
				western wheatgrass		5		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
96:								
Sheppard--------	Desert Sand	Favorable	900	sand dropseed	20		---	---
		Normal	550	Indian ricegrass	15			
		Unfavorable	350	alkali sacaton	15			
				fourwing saltbush	15			
				galleta	10			
				green Mormon tea	3			
97:								
Sideshow--------	Alkali Bottom	Favorable	400	alkali sacaton	20		---	---
		Normal	300	black greasewood	10			
		Unfavorable	200	inland saltgrass	10			
				basin big sagebrush	5			
				fourwing saltbush	5			
				western wheatgrass	5			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
98:								
Sideshow--------	Clayey Foothills	Favorable	1200	western wheatgrass	50		---	---
		Normal	900	galleta	20			
		Unfavorable	600	Wyoming big sagebrush	15			
				Indian ricegrass	5			
99:								
Simpatico-------	Loamy Foothills	Favorable	1600	western wheatgrass	30		---	---
		Normal	1200	muttongrass	25			
		Unfavorable	900	Indian ricegrass	10			
				basin big sagebrush	10			
				blue grama	5			
				needleandthread	5			
				prairie Junegrass	5			
100:								
Snapill---------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	10			
		Unfavorable	550	shadscale saltbush	10			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				sand dropseed	5			
101:								
Stephouse-------	Shallow Loamy Mesa Top Pinyon-Juniper	Favorable	750	Utah juniper		15	Utah juniper	---
		Normal	450	muttongrass		15	twoneedle pinyon	---
		Unfavorable	250	twoneedle pinyon		15		
				Indian ricegrass		10		
				Utah serviceberry		5		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				true mountain mahogany		5		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
102:								
Strych----------	Saltdesert Breaks	Favorable	500	shadscale saltbush	15		---	---
		Normal	350	Indian ricegrass	10			
		Unfavorable	200	Salina wildrye	10			
				galleta	10			
				bottlebrush squirreltail	5			
				Bigelow sagebrush	3			
				Utah juniper	3			
				green Mormon tea	3			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
102:								
Eagleye---------	Saltdesert Breaks	Favorable	500	shadscale saltbush	20		---	---
		Normal	350	galleta	15			
		Unfavorable	200	Indian ricegrass	10			
				Salina wildrye	10			
				bottlebrush squirreltail	5			
				Bigelow sagebrush	3			
				Utah juniper	3			
				green Mormon tea	3			
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
103:								
Tocito----------	Alkali Bottom	Favorable	500	alkali sacaton	20		---	---
		Normal	350	shadscale saltbush	10			
		Unfavorable	250	bottlebrush squirreltail	5			
				fourwing saltbush	5			
				galleta	5			
				greasewood	5			
Gullied land----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
104:								
Tohona----------	Clayey Saltdesert	Favorable	500	Gardner's saltbrush	20		---	---
		Normal	350	galleta	20			
		Unfavorable	200	shadscale saltbush	15			
				alkali sacaton	10			
				bottlebrush squirreltail	5			
				sand dropseed	5			
Kimnoli---------	Alkali Flat	Favorable	1000	galleta	30		---	---
		Normal	800	Indian ricegrass	10			
		Unfavorable	550	shadscale saltbush	10			
				New Mexico feathergrass	5			
				alkali sacaton	5			
				Bigelow sagebrush	3			
Claysprings-----	Saltdesert Breaks	Favorable	500	galleta	20		---	---
		Normal	350	shadscale saltbush	15			
		Unfavorable	200	Indian ricegrass	10			
				alkali sacaton	10			
				Salina wildrye	5			
				bottlebrush squirreltail	5			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
105:								
Torriorthents---	Saltdesert Breaks	Favorable	400	galleta	20		Utah juniper	---
		Normal	300	shadscale saltbush	20		twoneedle pinyon	---
		Unfavorable	200	Salina wildrye	10			
				alkali sacaton	10			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
106:								
Torriorthents---	Clayey Saltdesert	Favorable	400	galleta	20		Utah juniper	---
		Normal	300	shadscale saltbush	20		twoneedle pinyon	---
		Unfavorable	200	Salina wildrye	10			
				alkali sacaton	10			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
Badland---	Clayey Saltdesert	Favorable	---	mat saltbush	75		---	---
		Normal	---	mound saltbush	10			
		Unfavorable	---	alkali sacaton	5			
107:								
Towaoc---	Brushy Loam	Favorable	3000	Gambel oak	15		---	---
		Normal	2000	Utah serviceberry	10			
		Unfavorable	1500	muttongrass	10			
				slender wheatgrass	10			
				Arizona fescue	5			
				Letterman needlegrass	5			
				elk sedge	5			
				mountain snowberry	5			
				nodding brome	5			
				mountain big sagebrush	3			
				Woods rose	2			
				arrowleaf balsamroot	2			
				common chokecherry	2			
Kwiavu---	Brushy Loam	Favorable	3000	Gambel oak	10		---	---
		Normal	2000	Utah serviceberry	10			
		Unfavorable	1500	muttongrass	10			
				slender wheatgrass	10			
				Arizona fescue	5			
				Letterman needlegrass	5			
				elk sedge	5			
				mountain snowberry	5			
				nodding brome	5			
				mountain big sagebrush	3			
				Woods rose	2			
				arrowleaf balsamroot	2			
				common chokecherry	2			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
108:								
Towaoc----------	Brushy Loam	Favorable	3000	Gambel oak	10		---	---
		Normal	2000	Utah serviceberry	10			
		Unfavorable	1500	muttongrass	10			
				slender wheatgrass	10			
				Arizona fescue	5			
				Letterman needlegrass	5			
				elk sedge	5			
				mountain snowberry	5			
				nodding brome	5			
				mountain big sagebrush	3			
				Woods rose	2			
				arrowleaf balsamroot	2			
				aspen peavine	2			
				common chokecherry	2			
109:								
Tragmon---------	Brushy Loam	Favorable	3500	Gambel oak	20		---	---
		Normal	2200	Utah serviceberry	10			
		Unfavorable	1700	twoneedle pinyon	10			
				Wyoming big sagebrush	5			
				common snowberry	5			
				muttongrass	5			
				prairie Junegrass	5			
				western wheatgrass	5			
Sheek----------	Brushy Loam	Favorable	3000	Gambel oak	20		ponderosa pine	75
		Normal	2000	Utah serviceberry	10		Rocky Mountain juniper	---
		Unfavorable	1500	twoneedle pinyon	10		twoneedle pinyon	---
				Arizona fescue	5			
				antelope bitterbrush	5			
				common snowberry	5			
				mountain brome	5			
				mountain mahogany	5			
				prairie Junegrass	5			
				western wheatgrass	5			
110:								
Tupuyci---------	Alkali Bottom	Favorable	500	alkali sacaton	25		---	---
		Normal	350	greasewood	10			
		Unfavorable	250	fourwing saltbush	5			
				galleta	5			
				inland saltgrass	5			
				shadscale saltbush	5			
				western wheatgrass	5			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
110:								
Ives----------	Alkali Bottom	Favorable	500	alkali sacaton	25		---	---
		Normal	350	greasewood	10			
		Unfavorable	250	fourwing saltbush	5			
				galleta	5			
				inland saltgrass	5			
				shadscale saltbush	5			
				western wheatgrass	5			
111:								
Typic torriorthents--	Saltdesert Breaks	Favorable	500	Salina wildrye	20		---	---
		Normal	350	galleta	20			
		Unfavorable	200	shadscale saltbush	20			
				alkali sacaton	10			
				Bigelow sagebrush	5			
				Indian ricegrass	5			
				Utah juniper	5			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
112:								
Ustic torrifluvents--	Loamy Bottom	Favorable	950	basin big sagebrush	15		---	---
		Normal	800	galleta	15			
		Unfavorable	600	western wheatgrass	15			
				Indian ricegrass	10			
				alkali sacaton	10			
				greasewood	5			
				rubber rabbitbrush	5			
113:								
Ustic torriorthents--	Alkali Bottom	Favorable	1000	alkali sacaton	25		---	---
		Normal	700	greasewood	10			
		Unfavorable	500	basin big sagebrush	5			
				fourwing saltbush	5			
				galleta	5			
				shadscale saltbush	5			
				western wheatgrass	5			
Gullied land----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
114:								
Uzacol----------	Clayey Saltdesert	Favorable	625	shadscale saltbush	30		---	---
		Normal	450	Gardner's saltbrush	20			
		Unfavorable	250	galleta	20			
				alkali sacaton	10			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				mat saltbush	5			
Zwicker---------	Clayey Saltdesert	Favorable	500	shadscale saltbush	30		---	---
		Normal	350	Gardner's saltbrush	20			
		Unfavorable	200	galleta	20			
				alkali sacaton	10			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				mat saltbush	5			
Claysprings-----	Clayey Saltdesert	Favorable	375	Gardner's saltbrush	30		---	---
		Normal	250	galleta	20			
		Unfavorable	150	shadscale saltbush	15			
				alkali sacaton	10			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				mat saltbush	5			
115:								
Uzona----------	Clayey Saltdesert	Favorable	500	Gardner's saltbrush	30		---	---
		Normal	350	shadscale saltbush	10			
		Unfavorable	200	Indian ricegrass	5			
				alkali sacaton	5			
				bottlebrush squirreltail	5			
				galleta	5			
				mat saltbush	5			
116:								
Vessilla--------	Shallow Loamy Mesa Top Pinyon-Juniper	Favorable	600	Utah juniper		15	Utah juniper	80
		Normal	450	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	300	Wyoming big sagebrush		10		
				muttongrass		10		
				twoneedle pinyon		10		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				cliffrose		5		
				true mountain mahogany		5		
				green Mormon tea		3		
				thrifty goldenweed		2		

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
116:								
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
117:								
Vosburg---------	Deep Loam	Favorable	1800	needleandthread	20		---	---
		Normal	1500	basin big sagebrush	15			
		Unfavorable	900	western wheatgrass	15			
				muttongrass	10			
				prairie Junegrass	10			
				Indian ricegrass	5			
				rabbitbrush	5			
118:								
Water-----------	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
119:								
Water-----------	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Riverwash-------	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
120:								
Wauquie---------	Shallow Clay Loam Pinyon Juniper	Favorable	1000	Gambel oak		15	Utah juniper	---
		Normal	800	western wheatgrass		15	twoneedle pinyon	---
		Unfavorable	600	Utah juniper		10		
				muttongrass		10		
				true mountain mahogany		10		
				twoneedle pinyon		10		
				Indian ricegrass		5		
				antelope bitterbrush		5		
				big sagebrush		5		
121:								
Wauquie---------	Shallow Clay Loam Pinyon Juniper	Favorable	1300	Gambel oak		15	Utah juniper	---
		Normal	1000	twoneedle pinyon		15	twoneedle pinyon	---
		Unfavorable	700	muttongrass		10		
				true mountain mahogany		10		
				western wheatgrass		10		
				Indian ricegrass		5		
				Utah juniper		5		
				antelope bitterbrush		5		
				big sagebrush		5		

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
121:								
Dolcan----------	Shallow Clay Loam Pinyon Juniper	Favorable	600	Indian ricegrass		15	Utah juniper	---
		Normal	500	mountain mahogany		15	twoneedle pinyon	---
		Unfavorable	400	twoneedle pinyon		15		
				galleta		10		
				western wheatgrass		10		
				Utah juniper		5		
				Utah serviceberry		5		
				common snowberry		5		
				muttongrass		5		
				pinyon ricegrass		5		
122:								
Wauquie----------	Steep Shallow Clay Loam Pinyon-Juniper	Favorable	1100	Gambel oak		15	Utah juniper	---
		Normal	900	twoneedle pinyon		15	twoneedle pinyon	---
		Unfavorable	700	muttongrass		10		
				true mountain mahogany		10		
				western wheatgrass		10		
				Indian ricegrass		5		
				Utah juniper		5		
				antelope bitterbrush		5		
				big sagebrush		5		
Dolcan----------	Steep Shallow Clay Loam Pinyon-Juniper	Favorable	600	Indian ricegrass		15	Utah juniper	---
		Normal	500	mountain mahogany		15	twoneedle pinyon	---
		Unfavorable	400	twoneedle pinyon		15		
				galleta		10		
				western wheatgrass		10		
				Utah juniper		5		
				Utah serviceberry		5		
				common snowberry		5		
				muttongrass		5		
				pinyon ricegrass		5		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
123:								
Wetherill--------	Loamy Mesa Top Pinyon-Juniper	Favorable	800	muttongrass		20	Utah juniper	---
		Normal	600	Utah juniper		15	twoneedle pinyon	---
		Unfavorable	400	Wyoming big sagebrush		15		
				twoneedle pinyon		10		
				Indian ricegrass		5		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				true mountain mahogany		5		
				green Mormon tea		3		

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
123:								
Atlatl----------	Loamy Mesa Top Pinyon-Juniper	Favorable	800	muttongrass		20	Utah juniper	---
		Normal	600	Utah juniper		15	twoneedle pinyon	---
		Unfavorable	400	Indian ricegrass		10		
				twoneedle pinyon		10		
				Wyoming big sagebrush		5		
				bottlebrush squirreltail		5		
				true mountain mahogany		5		
				antelope bitterbrush		3		
				green Mormon tea		3		
124:								
Wetherill-------	Loamy Mesa Top Pinyon-Juniper	Favorable	800	Utah juniper		15	Utah juniper	---
		Normal	600	muttongrass		15	twoneedle pinyon	---
		Unfavorable	400	Indian ricegrass		10		
				true mountain mahogany		10		
				twoneedle pinyon		10		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				needleandthread		5		
Kucu----------	Shallow Loamy Mesa Top Pinyon-Juniper	Favorable	600	muttongrass		20	Utah juniper	---
		Normal	450	Utah juniper		15	twoneedle pinyon	---
		Unfavorable	300	Indian ricegrass		10		
				twoneedle pinyon		10		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				needleandthread		5		
				true mountain mahogany		5		
125:								
Wetherill-------	Loamy Foothills	Favorable	1500	muttongrass	30		---	---
		Normal	1200	western wheatgrass	30			
		Unfavorable	800	big sagebrush	15			
				Indian ricegrass	5			
				bottlebrush squirreltail	5			
				needleandthread	5			
126:								
Wetherill-------	Loamy Mesa Top Pinyon-Juniper	Favorable	1500	Utah juniper		15	Utah juniper	---
		Normal	1200	muttongrass		15	twoneedle pinyon	---
		Unfavorable	800	twoneedle pinyon		15		
				Indian ricegrass		10		
				true mountain mahogany		10		
				Wyoming big sagebrush		5		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				needleandthread		5		

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
127:								
Wetherill-------	Loamy Mesa Top Pinyon-Juniper	Favorable	1500	Utah juniper		15	Utah juniper	---
		Normal	1200	muttongrass		15	twoneedle pinyon	---
		Unfavorable	800	twoneedle pinyon		15		
				Indian ricegrass		10		
				true mountain mahogany		10		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				needleandthread		5		
128:								
Wetherill-------	Loamy Mesa Top Pinyon-Juniper	Favorable	1400	Utah juniper		15	Utah juniper	---
		Normal	1100	muttongrass		15	twoneedle pinyon	---
		Unfavorable	700	twoneedle pinyon		15		
				Indian ricegrass		10		
				true mountain mahogany		10		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				needleandthread		5		
129:								
Wetherill-------	Southwestern Mountain Pinyon-Juniper	Favorable	900	muttongrass		15	Utah juniper	---
		Normal	800	twoneedle pinyon		15	twoneedle pinyon	---
		Unfavorable	700	Utah juniper		10		
				Wyoming big sagebrush		10		
				Gambel oak		5		
				Indian ricegrass		5		
				bottlebrush squirreltail		5		
				Utah serviceberry		3		
				antelope bitterbrush		3		
				mountain snowberry		3		
Wetoe-----------	Southwestern Mountain Pinyon-Juniper	Favorable	800	muttongrass		15	Utah juniper	---
		Normal	700	twoneedle pinyon		15	twoneedle pinyon	---
		Unfavorable	600	Indian ricegrass		10		
				Gambel oak		5		
				Utah juniper		5		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				Utah serviceberry		3		
				Wyoming big sagebrush		3		
				mountain snowberry		3		

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
130:								
Wetoe	Southwestern Mountain Pinyon-Juniper	Favorable	900	muttongrass		15	Utah juniper	---
		Normal	800	twoneedle pinyon		15	twoneedle pinyon	---
		Unfavorable	700	Indian ricegrass		10		
				Wyoming big sagebrush		10		
				Gambel oak		5		
				bottlebrush squirreltail		5		
				Utah serviceberry		3		
				antelope bitterbrush		3		
				mountain snowberry		3		
				Utah juniper		2		
				yucca		2		
Nees	Southwestern Mountain Pinyon-Juniper	Favorable	800	muttongrass		15	Utah juniper	---
		Normal	700	twoneedle pinyon		15	twoneedle pinyon	---
		Unfavorable	600	Indian ricegrass		10		
				Gambel oak		5		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				Utah serviceberry		3		
				Wyoming big sagebrush		3		
				mountain snowberry		3		
				Utah juniper		2		
Rock outcrop	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
131:								
Yarts	Semidesert Loam	Favorable	900	galleta	15		---	---
		Normal	700	Indian ricegrass	10			
		Unfavorable	500	Wyoming big sagebrush	10			
				New Mexico feathergrass	5			
				blue grama	5			
				western wheatgrass	5			
				winterfat	5			
132:								
Yogovuci	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	bottlebrush squirreltail	10			
				shadscale saltbush	10			
				Indian ricegrass	5			
				fourwing saltbush	5			
				needleandthread	3			
				sand dropseed	3			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
132:								
Taqoci----------	Alkali Flat	Favorable	1000	alkali sacaton	20		---	---
		Normal	800	galleta	15			
		Unfavorable	550	bottlebrush squirreltail	10			
				shadscale saltbush	10			
				Indian ricegrass	5			
				fourwing saltbush	5			
				needleandthread	3			
				sand dropseed	3			
133:								
Zigzag----------	Southwestern Mountain Pinyon-Juniper	Favorable	600	Indian ricegrass		15	twoneedle pinyon	40
		Normal	400	Wyoming big sagebrush		15	Utah juniper	---
		Unfavorable	300	twoneedle pinyon		15		
				muttongrass		10		
				western wheatgrass		10		
				Utah juniper		5		
				Utah serviceberry		5		
				antelope bitterbrush		5		
				bottlebrush squirreltail		5		
				true mountain mahogany		5		
Sideshow--------	Clayey Foothills	Favorable	1200	western wheatgrass	50		---	---
		Normal	900	Wyoming big sagebrush	20			
		Unfavorable	600	Indian ricegrass	5			
				bottlebrush squirreltail	5			
				prairie Junegrass	5			
				rubber rabbitbrush	5			
134:								
Zyme----------	Saltdesert Breaks	Favorable	500	Indian ricegrass	15		---	---
		Normal	300	galleta	15			
		Unfavorable	200	shadscale saltbush	10			
				Wyoming big sagebrush	5			
				black sagebrush	5			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				Utah juniper	2			
				twoneedle pinyon	1			

Table 6.-- Ecological Sites and Characteristic Native Vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Site index
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct	Pct		
135:								
Zyme----------	Steep Shallow Clay Loam Pinyon-Juniper	Favorable	450	Utah juniper		15	Utah juniper	---
		Normal	350	Indian ricegrass		10	twoneedle pinyon	---
		Unfavorable	250	Salina wildrye		10		
				muttongrass		10		
				twoneedle pinyon		10		
				Utah serviceberry		5		
				common snowberry		5		
				galleta		5		
				mountain mahogany		5		
				western wheatgrass		5		
				cliffrose		3		
Katzine----------	Steep Shallow Clay Loam Pinyon-Juniper	Favorable	450	Indian ricegrass		15	Utah juniper	---
		Normal	350	Salina wildrye		10	twoneedle pinyon	---
		Unfavorable	250	Utah juniper		10		
				twoneedle pinyon		10		
				Utah serviceberry		5		
				common snowberry		5		
				galleta		5		
				mountain mahogany		5		
				muttongrass		5		
				western wheatgrass		5		
136:								
Zyme----------	Saltdesert Breaks	Favorable	500	Indian ricegrass	15		---	---
		Normal	300	galleta	15			
		Unfavorable	200	shadscale saltbush	10			
				Wyoming big sagebrush	5			
				black sagebrush	5			
				bottlebrush squirreltail	5			
				fourwing saltbush	5			
				Utah juniper	2			
				twoneedle pinyon	1			

Table 7a.--Recreation (Part 1)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arabrab	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too sandy	0.79	Too sandy	0.79	Slope	1.00
		Slope	0.04	Slope	0.04	Too sandy	0.79
						Large stones content	0.01
Longburn	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.08	Large stones content	0.08	Large stones content	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
						Gravel content	0.19
2:							
Awitava	85	Very limited		Very limited		Very limited	
		Gravel content	1.00	Slow water movement	1.00	Slow water movement	1.00
		Slow water movement	1.00	Gravel content	1.00	Gravel content	1.00
		Dusty	0.50	Dusty	0.50	Slope	0.88
						Dusty	0.50
						Large stones content	0.01
3:							
Badland	75	Not rated		Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated		Not rated	
4:							
Barx	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.50
						Dusty	0.50
Gapmesa	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.65
						Slope	0.50
						Dusty	0.50
5:							
Barx	85	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6:							
Barx	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Slope	0.12
7:							
Battlerock	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Slope	0.12
8:							
Battlerock, saline-sodic	70	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Flooding	1.00	Salinity	1.00	Salinity	1.00
		Salinity	1.00	Dusty	0.50	Dusty	0.50
		Dusty	0.50				
9:							
Battlerock, slightly saline-sodic	70	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Slow water movement	0.29	Slow water movement	0.29
		Slow water movement	0.29	Salinity	0.01	Salinity	0.01
		Salinity	0.01				
10:							
Bebeevar	60	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Too sandy	0.42	Flooding	0.60
		Too sandy	0.42			Too sandy	0.42
						Large stones content	0.03
Walrees	25	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Salinity	0.50	Flooding	1.00
		Salinity	0.50	Flooding	0.40	Salinity	0.50
11:							
Benally	80	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
						Slope	0.12
12:							
Blackston	55	Not limited		Not limited		Somewhat limited	
						Gravel content	0.91
						Large stones content	0.20

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
12:							
Camac	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Large stones content	1.00
		Large stones content	0.18	Large stones content	0.18	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Depth to bedrock	0.35
						Slow water movement	0.21
Rock outcrop	15	Not rated		Not rated		Not rated	
13:							
Bluechief	80	Not limited		Not limited		Not limited	
14:							
Bluechief	80	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
						Slope	0.50
15:							
Bluechief	75	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.54
Rock outcrop	15	Not rated		Not rated		Not rated	
16:							
Cahona	50	Not limited		Not limited		Very limited	
						Slope	1.00
Pulpit	35	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
						Depth to bedrock	0.90
						Dusty	0.50
17:							
Cahona	35	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.37	Slow water movement	0.37	Slope	1.00
		Gravel content	0.09	Gravel content	0.09	Gravel content	1.00
		Slope	0.04	Slope	0.04	Slow water movement	0.37
						Large stones content	0.20
Zigzag	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Gravel content	0.45

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
18:							
Camac	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Large stones content	1.00
		Large stones content	0.18	Large stones content	0.18	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Slow water movement	0.21
						Depth to bedrock	0.16
Kimbeto	35	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
						Gravel content	0.50
						Slope	0.12
Badland	15	Not rated		Not rated		Not rated	
19:							
Chimrock, sodic	75	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
20:							
Chimrock	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
21:							
Claysprings	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Large stones content	1.00
		Sodium content	1.00	Sodium content	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Gravel content	0.52	Gravel content	0.52	Depth to bedrock	1.00
		Slow water movement	0.45	Slow water movement	0.45	Sodium content	1.00
Badland	30	Not rated		Not rated		Not rated	
22:							
Claysprings	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	1.00
		Large stones content	0.42	Large stones content	0.42	Large stones content	0.53
		Slow water movement	0.41	Slow water movement	0.41	Slow water movement	0.41

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23:							
Cowboy	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Too clayey	1.00	Too clayey	1.00
		Too clayey	1.00	Slow water movement	0.94	Slow water movement	0.94
		Slow water movement	0.94				
24:							
Cowboy	50	Very limited		Very limited		Very limited	
		Sodium content	1.00	Too clayey	1.00	Too clayey	1.00
		Too clayey	1.00	Sodium content	1.00	Sodium content	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
Kava	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	0.41	Slow water movement	0.41	Slow water movement	0.41
25:							
Cowboy	50	Very limited		Very limited		Very limited	
		Sodium content	1.00	Too clayey	1.00	Slope	1.00
		Too clayey	1.00	Sodium content	1.00	Too clayey	1.00
		Slow water movement	0.96	Slow water movement	0.96	Sodium content	1.00
						Slow water movement	0.96
Kava	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	0.41	Slow water movement	0.41	Slope	1.00
						Slow water movement	0.41
26:							
Decorock	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	0.99	Gravel content	0.99	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Large stones content	0.46
Salamander	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
27:							
Decorock	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	0.99	Gravel content	0.99	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Large stones content	0.46
Salamander	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.50
						Dusty	0.50
Badland	10	Not rated		Not rated		Not rated	
28:							
Dolcan	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Gravel content	0.96	Gravel content	0.96	Gravel content	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Large stones content	0.32
Kucu	30	Not limited		Not limited		Very limited	
						Slope	1.00
29:							
Elias	50	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Slow water movement	0.33	Slow water movement	0.33	Slow water movement	0.33
						Slope	0.12
Yarts	40	Not limited		Not limited		Somewhat limited	
						Slope	0.12
30:							
Farb	55	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.01	Slope	0.01	Slope	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
31:							
Farb	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Gravel content	1.00
		Gravel content	1.00	Gravel content	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
31:							
Fruitland	20	Not limited		Not limited		Somewhat limited	
						Slope	0.50
32:							
Fardraw	85	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.71	Large stones content	0.71	Large stones content	1.00
		Slow water movement	0.41	Slow water movement	0.41	Slope	0.88
						Gravel content	0.65
						Slow water movement	0.41
33:							
Farview	60	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too sandy	0.79	Too sandy	0.79	Gravel content	1.00
		Gravel content	0.04	Gravel content	0.04	Slope	1.00
						Too sandy	0.79
						Large stones content	0.01
Beclabito	20	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
						Slope	0.12
						Gravel content	0.06
Rock outcrop	10	Not rated		Not rated		Not rated	
34:							
Farview	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too sandy	0.79	Too sandy	0.79	Gravel content	1.00
		Gravel content	0.04	Gravel content	0.04	Slope	1.00
						Too sandy	0.79
						Large stones content	0.01
Rock outcrop	35	Not rated		Not rated		Not rated	
35:							
Fluvents	55	Not rated		Not rated		Not rated	
Fluvaquents	30	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
						Gravel content	0.16
						Large stones content	0.01

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
36:							
Gladel	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
						Slope	1.00
						Gravel content	0.94
Pulpit	35	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
						Depth to bedrock	0.90
						Dusty	0.50
37:							
Greycap	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Slope	0.12
Nomad	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.50	Too sandy	0.50	Too sandy	0.50
						Depth to bedrock	0.46
						Slope	0.12
38:							
Gypsey	80	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.65
						Slope	0.50
39:							
Gypsey	75	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
						Depth to bedrock	0.65
40:							
Herm	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.39	Slow water movement	0.39	Slow water movement	0.39
41:							
Hope	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
						Slope	0.12
42:							
Hoskay	40	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Slow water movement	0.96	Slow water movement	0.96	Gravel content	1.00
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Gravel content	0.04	Gravel content	0.04	Slow water movement	0.96
						Dusty	0.50

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
42:							
Patel	30	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Gravel content	0.11	Gravel content	0.11	Slow water movement	0.96
						Depth to bedrock	0.20
Badland	15	Not rated		Not rated		Not rated	
43:							
Ives	85	Very limited		Not limited		Not limited	
		Flooding	1.00				
44:							
Jeddito	70	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Too sandy	0.92	Too sandy	0.92
		Too sandy	0.92				
Escavada	15	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Dusty	0.50	Flooding	0.60
		Dusty	0.50			Dusty	0.50
45:							
Jeddito	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Too sandy	0.92	Too sandy	0.92
		Too sandy	0.92				
46:							
Juanalo	75	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
						Slope	0.50
47:							
Katzine	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	0.90	Gravel content	0.90	Slope	1.00
		Too sandy	0.01	Too sandy	0.01	Large stones content	0.95
		Large stones content	0.01	Large stones content	0.01	Too sandy	0.01
48:							
Lazear	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Large stones content	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.88	Large stones content	0.88	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Gravel content	0.20

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
48:							
Rock outcrop	30	Not rated		Not rated		Not rated	
49:							
Lillings	90	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Slope	0.88
50:							
Littlehat	35	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Salinity	1.00	Salinity	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Salinity	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Depth to bedrock	0.06
Persayo	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50
Badland	15	Not rated		Not rated		Not rated	
51:							
Littlehat	35	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Salinity	1.00	Salinity	1.00	Salinity	1.00
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.01	Slope	0.01	Dusty	0.50
						Depth to bedrock	0.35
Persayo	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Slope	0.12
Nataani	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Depth to bedrock	0.46
						Slope	0.12
52:							
Littlewater	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	0.79	Gravel content	0.79	Slope	1.00
		Large stones content	0.02	Large stones content	0.02	Large stones content	0.99
Rubbleland	30	Not rated		Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53:							
Longburn	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.08	Large stones content	0.08	Large stones content	1.00
						Gravel content	0.19
Rock outcrop	20	Not rated		Not rated		Not rated	
54:							
Longburn	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.08	Large stones content	0.08	Large stones content	1.00
						Gravel content	0.19
Rock outcrop	30	Not rated		Not rated		Not rated	
55:							
Mack	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
56:							
Mack	80	Not limited		Not limited		Not limited	
57:							
Mack	80	Not limited		Not limited		Somewhat limited	
						Slope	0.50
58:							
Mariano	75	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
59:							
Mariano	75	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Dusty	0.50	Dusty	0.50	Slope	0.50
						Dusty	0.50
						Large stones content	0.01
60:							
Mariano, Stony	80	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Dusty	0.50	Dusty	0.50	Slope	0.88
						Dusty	0.50
						Large stones content	0.20

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
61:							
Mikett	85	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Salinity	0.50	Salinity	0.50	Salinity	0.50
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
62:							
Mikett	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Salinity	0.50	Salinity	0.50	Salinity	0.50
63:							
Mikim	90	Not limited		Not limited		Not limited	
64:							
Mikim	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.88
						Dusty	0.50
65:							
Monierco	75	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too sandy	0.01	Too sandy	0.01	Slope	1.00
						Too sandy	0.01
66:							
Morefield	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
67:							
Morefield	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.88
						Dusty	0.50
68:							
Nataani	60	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.01
Yogovuci	20	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slow water movement	0.43	Slow water movement	0.43	Dusty	0.50
						Slow water movement	0.43
69:							
Oagamati	70	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Slope	0.50
						Depth to bedrock	0.10

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
70:							
Pagayvay	90	Not rated		Not rated		Not rated	
71:							
Persayo	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.01	Slope	0.01	Dusty	0.50
Cairn	30	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.11	Gravel content	0.11	Gravel content	1.00
						Slope	0.12
						Large stones content	0.01
Patel	25	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Gravel content	1.00
		Gravel content	1.00	Gravel content	1.00	Sodium content	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
		Dusty	0.50	Dusty	0.50	Dusty	0.50
72:							
Persayo	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Gravel content	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Depth to bedrock	1.00
		Gravel content	0.32	Gravel content	0.32	Dusty	0.50
73:							
Persayo	75	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
						Slope	1.00
74:							
Persayo	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
Yogovuci	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
						Slope	0.12
75:							
Picliff	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
						Slope	0.88

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
76:							
Pogo	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
						Gravel content	0.06
77:							
Prater	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Slow water movement	0.41	Slow water movement	0.41	Slow water movement	0.41
						Large stones content	0.11
						Gravel content	0.10
Dolcan	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.99	Large stones content	0.99	Large stones content	1.00
						Gravel content	0.21
78:							
Pulpit	80	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.01	Slope	0.01	Dusty	0.50
						Depth to bedrock	0.10
79:							
Ramper	90	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Dusty	0.50	Dusty	0.50
		Dusty	0.50				
80:							
Ravola	85	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Salinity	1.00	Salinity	1.00	Salinity	1.00
		Flooding	1.00				
81:							
Ravola	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Dusty	0.50	Dusty	0.50
		Dusty	0.50				
82:							
Ravola	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Dusty	0.50	Flooding	0.60
		Dusty	0.50			Dusty	0.50

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
83:							
Redlands	85	Not limited		Not limited		Not limited	
84:							
Redlands	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
85:							
Rizno	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Slope	1.00
						Dusty	0.50
Gapmesa	35	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
						Depth to bedrock	0.65
						Dusty	0.50
86:							
Rock outcrop	95	Not rated		Not rated		Not rated	
87:							
Rock outcrop	55	Not rated		Not rated		Not rated	
Farview	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Gravel content	0.24	Gravel content	0.24	Gravel content	1.00
88:							
Romberg	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Large stones content	1.00
		Large stones content	0.94	Large stones content	0.94	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Gravel content	0.25
Crosscan	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.98	Large stones content	0.98	Large stones content	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
		Slow water movement	0.41	Slow water movement	0.41	Slow water movement	0.41

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
89:							
Romberg	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Large stones content	1.00
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	0.94	Large stones content	0.94	Large stones content	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Gravel content	0.25
Crosscan	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.98	Large stones content	0.98	Large stones content	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
		Slow water movement	0.41	Slow water movement	0.41	Slow water movement	0.41
Rock outcrop	20	Not rated		Not rated		Not rated	
90:							
Roubideau	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.50
						Dusty	0.50
						Depth to bedrock	0.01
91:							
Sharps	80	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50
						Depth to bedrock	0.29
92:							
Sharps, dry	45	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50
						Depth to bedrock	0.29
Gapmesa	40	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to bedrock	0.65
						Dusty	0.50
93:							
Sheek	50	Not rated		Not rated		Not rated	
Archuleta	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
94:							
Sheek	35	Not rated		Not rated		Not rated	
Archuleta	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
Rock outcrop	20	Not rated		Not rated		Not rated	
95:							
Sheek	40	Not rated		Not rated		Not rated	
Archuleta	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
Rock outcrop	20	Not rated		Not rated		Not rated	
96:							
Sheppard	90	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Too sandy	1.00
						Slope	0.50
97:							
Sideshow	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.41	Slow water movement	0.41	Slow water movement	0.41
98:							
Sideshow	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.41	Slow water movement	0.41	Slope	0.88
						Slow water movement	0.41
99:							
Simpatico	70	Very limited		Not limited		Not limited	
		Flooding	1.00				
100:							
Snapill	85	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Dusty	0.50	Dusty	0.50	Slope	0.50
						Dusty	0.50
101:							
Stephouse	55	Not rated		Not rated		Not rated	
Rock outcrop	25	Not rated		Not rated		Not rated	

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
102:							
Strych	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Large stones content	1.00
		Large stones content	0.98	Large stones content	0.98	Slope	1.00
		Dusty	0.50	Dusty	0.50	Gravel content	0.56
						Dusty	0.50
Eagleye	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	0.41	Slow water movement	0.41	Gravel content	1.00
		Gravel content	0.12	Gravel content	0.12	Large stones content	1.00
		Large stones content	0.03	Large stones content	0.03	Slow water movement	0.41
Rock outcrop	15	Not rated		Not rated		Not rated	
103:							
Tocito	55	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Dusty	0.50	Dusty	0.50
		Dusty	0.50				
Gullied land	30	Not rated		Not rated		Not rated	
104:							
Tohona	50	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Gravel content	1.00
		Gravel content	1.00	Gravel content	1.00	Sodium content	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
						Slow water movement	0.96
						Depth to bedrock	0.20
Kimnoli	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too sandy	0.96	Too sandy	0.96	Slope	1.00
						Too sandy	0.96
Claysprings	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Large stones content	1.00
		Sodium content	1.00	Sodium content	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Gravel content	0.52	Gravel content	0.52	Depth to bedrock	1.00
		Slow water movement	0.45	Slow water movement	0.45	Sodium content	1.00

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
105:							
Torriorthents-------	90	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Large stones content	1.00
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Large stones content	1.00
		Salinity	0.01	Salinity	0.01	Salinity	0.01
106:							
Torriorthents-------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slow water movement	0.41	Slow water movement	0.41	Slow water movement	0.41
Badland-------------	30	Not rated		Not rated		Not rated	
107:							
Towaoc--------------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	0.99	Gravel content	0.99	Slope	1.00
						Large stones content	0.68
Kwiavu--------------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Large stones content	0.08
108:							
Towaoc--------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	0.99	Gravel content	0.99	Slope	1.00
						Large stones content	0.68
109:							
Tragmon-------------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Large stones content	0.03
Sheek---------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.08	Large stones content	0.08	Large stones content	1.00
						Gravel content	0.35

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
110:							
Tupuyci	60	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Large stones content	0.19	Gravel content	0.74
		Large stones content	0.19	Salinity	0.01	Large stones content	0.19
		Salinity	0.01			Salinity	0.01
Ives	20	Very limited		Not limited		Not limited	
		Flooding	1.00				
111:							
Typic Torriorthents-	60	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Large stones content	1.00
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Large stones content	1.00
		Salinity	0.01	Salinity	0.01	Salinity	0.01
Rock outcrop	25	Not rated		Not rated		Not rated	
112:							
Ustic Torrifluvents-	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Too sandy	0.79	Too sandy	0.79
		Too sandy	0.79	Salinity	0.13	Salinity	0.13
		Salinity	0.13				
113:							
Ustic Torriorthents-	45	Not rated		Not rated		Not rated	
Gullied land	40	Not rated		Not rated		Not rated	
114:							
Uzacol	35	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
						Slow water movement	0.99
						Gravel content	0.45

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
114:							
Zwicker	30	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.41	Slow water movement	0.41	Slope	1.00
		Slope	0.01	Slope	0.01	Large stones content	0.92
						Gravel content	0.42
						Slow water movement	0.41
						Depth to bedrock	0.29
Claysprings	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	1.00
		Large stones content	0.42	Large stones content	0.42	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41	Large stones content	0.53
		Slope	0.01	Slope	0.01	Slow water movement	0.41
115:							
Uzona	75	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
		Dusty	0.50	Dusty	0.50	Slope	0.50
						Dusty	0.50
116:							
Vessilla	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.49
						Large stones content	0.20
Rock outcrop	25	Not rated		Not rated		Not rated	
117:							
Vosburg	85	Not limited		Not limited		Very limited	
						Slope	1.00
118:							
Water	100	Not rated		Not rated		Not rated	
119:							
Water	70	Not rated		Not rated		Not rated	
Riverwash	20	Not rated		Not rated		Not rated	

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
120:							
Wauquie	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.84	Large stones content	0.84	Large stones content	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	0.53
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Gravel content	0.19
121:							
Wauquie	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.35	Large stones content	0.35	Large stones content	1.00
						Gravel content	0.04
Dolcan	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.99	Large stones content	0.99	Large stones content	1.00
						Gravel content	0.21
122:							
Wauquie	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.35	Large stones content	0.35	Large stones content	1.00
						Gravel content	0.04
Dolcan	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.99	Large stones content	0.99	Large stones content	1.00
						Gravel content	0.21
Rock outcrop	15	Not rated		Not rated		Not rated	
123:							
Wetherill	50	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.01	Slope	0.01	Dusty	0.50
Atlatl	35	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.18	Gravel content	0.18	Gravel content	1.00
		Slope	0.01	Slope	0.01	Slope	1.00
						Depth to bedrock	0.46

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
124:							
Wetherill	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.88
						Dusty	0.50
Kucu	25	Not limited		Not limited		Somewhat limited	
						Slope	0.88
125:							
Wetherill	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.88
						Dusty	0.50
126:							
Wetherill	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
127:							
Wetherill	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.88
						Dusty	0.50
128:							
Wetherill	80	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Dusty	0.50
129:							
Wetherill	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.88
						Dusty	0.50
Wetoe	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Large stones content	1.00
		Slow water movement	0.37	Slow water movement	0.37	Slope	1.00
		Large stones content	0.18	Large stones content	0.18	Gravel content	0.86
		Slope	0.01	Slope	0.01	Dusty	0.50
						Slow water movement	0.37
130:							
Wetoe	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	1.00	Gravel content	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Large stones content	0.08

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
130:							
Nees	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Gravel content	1.00	Gravel content	1.00	Depth to bedrock	1.00
		Large stones content	0.08	Large stones content	0.08	Large stones content	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
131:							
Yarts	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
132:							
Yogovuci	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Dusty	0.50
		Slow water movement	0.43	Slow water movement	0.43	Slow water movement	0.43
						Slope	0.12
Taqoci	40	Very limited		Very limited		Very limited	
		Sodium content	1.00	Sodium content	1.00	Sodium content	1.00
		Dusty	0.50	Dusty	0.50	Dusty	0.50
						Slope	0.12
133:							
Zigzag	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	1.00	Gravel content	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	0.41	Slow water movement	0.41	Slow water movement	0.41
						Large stones content	0.03
Sideshow	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.41	Slow water movement	0.41	Slow water movement	0.41
134:							
Zyme	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Gravel content	1.00
		Slow water movement	0.41	Slow water movement	0.41	Depth to bedrock	1.00
		Gravel content	0.16	Gravel content	0.16	Slope	1.00
		Slope	0.01	Slope	0.01	Slow water movement	0.41
						Large stones content	0.03

Table 7a.--Recreation (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
135:							
Zyme	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	0.41	Slow water movement	0.41	Gravel content	0.45
						Slow water movement	0.41
Katzine, dry	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	0.90	Gravel content	0.90	Slope	1.00
		Large stones content	0.01	Large stones content	0.01	Large stones content	0.95
136:							
Zyme	80	Very limited		Very limited		Very limited	
		Gravel content	1.00	Gravel content	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Slow water movement	0.41	Slow water movement	0.41	Slow water movement	0.41
						Large stones content	0.03

Table 7b.--Recreation (Part 2)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arabrab	45	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.79	Too sandy	0.79	Depth to bedrock	1.00
						Droughty	0.99
						Slope	0.04
						Large stones content	0.01
Longburn	40	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.08	Large stones content	0.08	Depth to bedrock	1.00
						Droughty	1.00
						Large stones content	1.00
						Slope	0.04
2:							
Awitava	85	Very limited		Very limited		Very limited	
		Gravel content	1.00	Gravel content	1.00	Gravel content	1.00
		Dusty	0.50	Dusty	0.50	Droughty	1.00
						Carbonate content	1.00
						Large stones content	0.01
3:							
Badland	75	Not rated		Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated		Not rated	
4:							
Barx	60	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Gapmesa	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Droughty	0.67
						Depth to bedrock	0.65
5:							
Barx	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.04
6:							
Barx	90	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
7:							
Battlerock	85	Not limited		Not limited		Not limited	

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8:							
Battlerock, saline-sodic	70	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
						Salinity	1.00
9:							
Battlerock, slightly saline-sodic	70	Not limited		Not limited		Somewhat limited	
						Salinity	0.01
10:							
Bebeevar	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.42	Too sandy	0.42	Droughty	0.91
						Flooding	0.60
						Large stones content	0.03
Walrees	25	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
						Salinity	0.50
						Droughty	0.02
11:							
Benally	80	Not limited		Not limited		Very limited	
						Sodium content	1.00
						Droughty	0.58
12:							
Blackston	55	Not limited		Not limited		Somewhat limited	
						Droughty	0.73
						Large stones content	0.20
Camac	20	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.96	Slope	1.00
		Large stones content	0.18	Large stones content	0.18	Large stones content	1.00
						Depth to bedrock	0.35
						Droughty	0.03
						Gravel content	0.01
Rock outcrop	15	Not rated		Not rated		Not rated	
13:							
Bluechief	80	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
						Droughty	0.10
14:							
Bluechief	80	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
						Droughty	0.10

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
15:							
Bluechief	75	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
						Droughty	0.10
Rock outcrop	15	Not rated		Not rated		Not rated	
16:							
Cahona	50	Not limited		Not limited		Not limited	
Pulpit	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.90
17:							
Cahona	35	Not limited		Not limited		Somewhat limited	
						Large stones content	0.20
						Gravel content	0.09
						Slope	0.04
Zigzag	35	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Depth to bedrock	1.00
						Droughty	1.00
						Slope	1.00
18:							
Camac	35	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.56	Slope	1.00
		Large stones content	0.18	Large stones content	0.18	Large stones content	1.00
						Depth to bedrock	0.16
						Gravel content	0.01
Kimbeto	35	Not limited		Not limited		Very limited	
						Sodium content	1.00
						Droughty	0.44
Badland	15	Not rated		Not rated		Not rated	
19:							
Chimrock, sodic	75	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
20:							
Chimrock	75	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21:							
Claysprings	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.35	Large stones content	0.35	Slope	1.00
						Large stones content	1.00
						Sodium content	1.00
						Droughty	1.00
Badland	30	Not rated		Not rated		Not rated	
22:							
Claysprings	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.99	Depth to bedrock	1.00
		Large stones content	0.53	Large stones content	0.53	Large stones content	1.00
		Large stones content	0.42	Large stones content	0.42	Slope	1.00
						Droughty	0.58
23:							
Cowboy	85	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
24:							
Cowboy	50	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
						Sodium content	1.00
Kava	30	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	0.90
25:							
Cowboy	50	Very limited		Very limited		Very limited	
		Too clayey	1.00	Too clayey	1.00	Too clayey	1.00
						Sodium content	1.00
Kava	30	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	0.90
26:							
Decorock	55	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.78	Slope	1.00
						Gravel content	0.99
						Large stones content	0.46
						Droughty	0.02
Salamander	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Droughty	0.20

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
27:							
Decorock	60	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.78	Slope	1.00
						Gravel content	0.99
						Large stones content	0.46
						Droughty	0.02
Salamander	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Droughty	0.20
Badland	10	Not rated		Not rated		Not rated	
28:							
Dolcan	50	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	1.00
		Slope	0.08			Droughty	1.00
						Slope	1.00
						Gravel content	0.96
						Large stones content	0.32
Kucu	30	Not limited		Not limited		Very limited	
						Carbonate content	1.00
29:							
Elias	50	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
Yarts	40	Not limited		Not limited		Not limited	
30:							
Farb	55	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Slope	0.01
Rock outcrop	30	Not rated		Not rated		Not rated	
31:							
Farb	30	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Gravel content	1.00
						Slope	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
Fruitland	20	Not limited		Not limited		Not limited	

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
32:							
Fardraw	85	Somewhat limited Large stones content	0.71	Somewhat limited Large stones content	0.71	Very limited Large stones content Droughty	1.00 0.12
33:							
Farview	60	Somewhat limited Too sandy	0.79	Somewhat limited Too sandy	0.79	Very limited Depth to bedrock Droughty Gravel content Large stones content	1.00 1.00 0.04 0.01
Beclabito	20	Not limited		Not limited		Very limited Sodium content	1.00
Rock outcrop	10	Not rated		Not rated		Not rated	
34:							
Farview	50	Somewhat limited Too sandy	0.79	Somewhat limited Too sandy	0.79	Very limited Depth to bedrock Droughty Gravel content Large stones content	1.00 1.00 0.04 0.01
Rock outcrop	35	Not rated		Not rated		Not rated	
35:							
Fluvents	55	Not rated		Not rated		Not rated	
Fluvaquents	30	Somewhat limited Flooding	0.40	Somewhat limited Flooding	0.40	Very limited Flooding Droughty Depth to saturated zone Large stones content	1.00 0.34 0.19 0.01
36:							
Gladel	45	Not limited		Not limited		Very limited Depth to bedrock Droughty	1.00 1.00
Pulpit	35	Somewhat limited Dusty	0.50	Somewhat limited Dusty	0.50	Somewhat limited Depth to bedrock	0.90
37:							
Greycap	40	Somewhat limited Dusty	0.50	Somewhat limited Dusty	0.50	Very limited Depth to bedrock Droughty Carbonate content	1.00 1.00 1.00

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
37:							
Nomad	40	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.50	Too sandy	0.50	Carbonate content	1.00
						Depth to bedrock	0.46
38:							
Gypsey	80	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.65
39:							
Gypsey	75	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.65
						Slope	0.04
40:							
Herm	90	Not limited		Not limited		Very limited	
						Slope	1.00
41:							
Hope	75	Not limited		Not limited		Not limited	
42:							
Hoskay	40	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
						Gravel content	0.04
						Droughty	0.01
						Large stones content	0.01
Patel	30	Not limited		Not limited		Very limited	
						Sodium content	1.00
						Slope	1.00
						Depth to bedrock	0.20
						Gravel content	0.11
						Droughty	0.01
Badland	15	Not rated		Not rated		Not rated	
43:							
Ives	85	Not limited		Not limited		Somewhat limited	
						Droughty	0.32
44:							
Jeddito	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.92	Too sandy	0.92	Droughty	0.02
Escavada	15	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Flooding	0.60
						Droughty	0.37
45:							
Jeddito	85	Somewhat limited		Somewhat limited		Not limited	
		Too sandy	0.92	Too sandy	0.92		

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
46:							
Juanalo	75	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Carbonate content	1.00
						Gravel content	0.06
47:							
Katzine	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
		Too sandy	0.01	Too sandy	0.01	Droughty	0.99
		Large stones content	0.01	Large stones content	0.01	Large stones content	0.95
						Gravel content	0.90
48:							
Lazear	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.88	Depth to bedrock	1.00
		Large stones content	0.88	Dusty	0.50	Large stones content	1.00
		Dusty	0.50	Slope	0.01	Droughty	1.00
						Slope	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
49:							
Lillings	90	Not limited		Not limited		Not limited	
50:							
Littlehat	35	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Sodium content	1.00
		Slope	0.98	Dusty	0.50	Salinity	1.00
		Dusty	0.50			Slope	1.00
						Droughty	0.81
						Depth to bedrock	0.06
Persayo	35	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Depth to bedrock	1.00
		Dusty	0.50	Dusty	0.50	Droughty	0.98
						Slope	0.04
Badland	15	Not rated		Not rated		Not rated	
51:							
Littlehat	35	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
						Salinity	1.00
						Droughty	0.96
						Depth to bedrock	0.35
						Slope	0.01

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
51:							
Persayo	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	1.00
						Droughty	1.00
Nataani	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.46
						Droughty	0.01
52:							
Littlewater	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.02	Large stones content	0.02	Large stones content	0.99
						Gravel content	0.79
						Droughty	0.44
Rubbleland	30	Not rated		Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated		Not rated	
53:							
Longburn	65	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.08	Depth to bedrock	1.00
		Large stones content	0.08	Large stones content	0.08	Droughty	1.00
						Large stones content	1.00
						Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
54:							
Longburn	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.08	Large stones content	0.08	Slope	1.00
						Droughty	1.00
						Large stones content	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
55:							
Mack	85	Not limited		Not limited		Not limited	
56:							
Mack	80	Not limited		Not limited		Not limited	

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
57:							
Mack	80	Not limited		Not limited		Not limited	
58:							
Mariano	75	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
						Carbonate content	1.00
						Droughty	0.57
59:							
Mariano	75	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
						Carbonate content	1.00
						Droughty	0.57
						Large stones content	0.01
60:							
Mariano, Stony	80	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
						Carbonate content	1.00
						Droughty	0.75
						Large stones content	0.20
61:							
Mikett	85	Not limited		Not limited		Very limited	
						Sodium content	1.00
						Salinity	0.50
						Depth to saturated zone	0.19
62:							
Mikett	85	Not limited		Not limited		Somewhat limited	
						Salinity	0.50
63:							
Mikim	90	Not limited		Not limited		Not limited	
64:							
Mikim	90	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
65:							
Monierco	75	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	1.00
						Droughty	0.99
66:							
Morefield	90	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
67:							
Morefield	90	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
68:							
Nataani	60	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.01
Yogovuci	20	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
69:							
Oagamati	70	Not limited		Not limited		Very limited	
						Sodium content	1.00
						Depth to bedrock	0.10
70:							
Pagayvay	90	Not rated		Not rated		Very limited	
						Droughty	1.00
						Gravel content	1.00
						Large stones content	0.99
71:							
Persayo	35	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	1.00
						Droughty	0.99
						Slope	0.01
Cairn	30	Not limited		Not limited		Very limited	
						Carbonate content	1.00
						Droughty	0.43
						Gravel content	0.11
						Large stones content	0.01
Patel	25	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
						Gravel content	1.00
						Slope	1.00
						Depth to bedrock	0.03
						Large stones content	0.01
72:							
Persayo	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Dusty	0.50	Depth to bedrock	1.00
		Dusty	0.50	Slope	0.22	Slope	1.00
						Droughty	0.99
						Gravel content	0.32

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73:							
Persayo	75	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	0.99
74:							
Persayo	50	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	0.99
						Slope	0.63
Yogovuci	35	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
75:							
Picliff	80	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
76:							
Pogo	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
77:							
Prater	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Large stones content	0.11
Dolcan	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.99	Large stones content	0.99	Slope	1.00
						Droughty	1.00
						Large stones content	1.00
78:							
Pulpit	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.10
						Slope	0.01
79:							
Ramper	90	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
80:							
Ravola	85	Not limited		Not limited		Very limited	
						Salinity	1.00
						Sodium content	1.00

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
81:							
Ravola	85	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
82:							
Ravola	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Flooding	0.60
83:							
Redlands	85	Not limited		Not limited		Not limited	
84:							
Redlands	85	Not limited		Not limited		Not limited	
85:							
Rizno	45	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	1.00
						Droughty	1.00
Gapmesa	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Droughty	0.67
						Depth to bedrock	0.65
86:							
Rock outcrop	95	Not rated		Not rated		Not rated	
87:							
Rock outcrop	55	Not rated		Not rated		Not rated	
Farview	35	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Slope	1.00
						Gravel content	0.24
88:							
Romberg	45	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.94	Large stones content	0.94	Large stones content	1.00
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
		Dusty	0.50	Dusty	0.50	Droughty	0.34
		Slope	0.02				
Crosscan	40	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.98	Large stones content	0.98	Depth to bedrock	1.00
		Large stones content	0.53	Large stones content	0.53	Droughty	1.00
		Slope	0.02			Large stones content	1.00
						Slope	1.00

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
89:							
Romberg	35	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	0.96	Large stones content	1.00
		Large stones content	0.94	Large stones content	0.94	Droughty	0.34
		Dusty	0.50	Dusty	0.50		
Crosscan	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.98	Large stones content	0.98	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Droughty	1.00
						Large stones content	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
90:							
Roubideau	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.01
91:							
Sharps	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.29
						Slope	0.04
92:							
Sharps, dry	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Depth to bedrock	0.29
						Slope	0.04
Gapmesa	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Droughty	0.67
						Depth to bedrock	0.65
						Slope	0.04
93:							
Sheek	50	Not rated		Not rated		Not rated	
Archuleta	35	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.53	Large stones content	0.53	Depth to bedrock	1.00
		Slope	0.02			Slope	1.00
						Droughty	0.87
94:							
Sheek	35	Not rated		Not rated		Not rated	

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
94:							
Archuleta	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
						Droughty	0.87
Rock outcrop	20	Not rated		Not rated		Not rated	
95:							
Sheek	40	Not rated		Not rated		Not rated	
Archuleta	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
						Droughty	0.87
Rock outcrop	20	Not rated		Not rated		Not rated	
96:							
Sheppard	90	Very limited		Very limited		Somewhat limited	
		Too sandy	1.00	Too sandy	1.00	Droughty	0.74
97:							
Sideshow	90	Not limited		Not limited		Not limited	
98:							
Sideshow	90	Not limited		Not limited		Not limited	
99:							
Simpatico	70	Not limited		Not limited		Not limited	
100:							
Snapill	85	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
101:							
Stephouse	55	Not rated		Not rated		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Gravel content	0.20
						Large stones content	0.01
Rock outcrop	25	Not rated		Not rated		Not rated	
102:							
Strych	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.98	Large stones content	0.98	Large stones content	1.00
		Dusty	0.50	Dusty	0.50	Droughty	0.32

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
102:							
Eagleye	25	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.96	Depth to bedrock	1.00
		Large stones content	0.03	Large stones content	0.03	Slope	1.00
						Large stones content	1.00
						Droughty	0.99
						Gravel content	0.12
Rock outcrop	15	Not rated		Not rated		Not rated	
103:							
Tocito	55	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Gullied land	30	Very limited		Very limited		Not rated	
		Water erosion	1.00	Water erosion	1.00		
		Slope	1.00	Slope	1.00		
104:							
Tohona	50	Not limited		Not limited		Very limited	
						Sodium content	1.00
						Gravel content	1.00
						Depth to bedrock	0.20
						Droughty	0.18
						Large stones content	0.03
Kimnoli	20	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.96	Too sandy	0.96	Depth to bedrock	1.00
						Droughty	1.00
Claysprings	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.35	Large stones content	0.35	Slope	1.00
						Large stones content	1.00
						Sodium content	1.00
						Droughty	1.00
105:							
Torriorthents	90	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Depth to bedrock	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	1.00	Slope	0.99	Droughty	1.00
						Slope	1.00
						Salinity	0.01

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
106:							
Torriorthents-------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Depth to bedrock	1.00
		Large stones content	1.00	Slope	1.00	Slope	1.00
						Droughty	0.74
Badland----------	30	Not rated		Not rated		Not rated	
107:							
Towaoc----------	45	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Gravel content	0.99
						Droughty	0.90
						Large stones content	0.68
Kwiavu----------	40	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Large stones content	0.08
108:							
Towaoc----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.99
						Droughty	0.90
						Large stones content	0.68
109:							
Tragmon----------	50	Somewhat limited		Not limited		Very limited	
		Slope	0.02			Slope	1.00
						Large stones content	0.03
Sheek----------	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.32	Large stones content	0.08	Slope	1.00
		Large stones content	0.08			Large stones content	1.00
110:							
Tupuyci----------	60	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.19	Large stones content	0.19	Droughty	1.00
						Salinity	0.01
Ives----------	20	Not limited		Not limited		Somewhat limited	
						Droughty	0.32

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
111:							
Typic Torriorthents-	60	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Depth to bedrock	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
						Slope	1.00
						Salinity	0.01
Rock outcrop--------	25	Not rated		Not rated		Not rated	
112:							
Ustic Torrifluvents-	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.79	Too sandy	0.79	Droughty	0.48
						Salinity	0.13
113:							
Ustic Torriorthents-	45	Not rated		Not rated		Not rated	
Gullied land--------	40	Not rated		Not rated		Not rated	
114:							
Uzacol--------------	35	Not limited		Not limited		Very limited	
						Sodium content	1.00
Zwicker-------------	30	Not limited		Not limited		Somewhat limited	
						Large stones content	0.92
						Depth to bedrock	0.29
						Slope	0.01
Claysprings---------	20	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.53	Large stones content	0.53	Depth to bedrock	1.00
		Large stones content	0.42	Large stones content	0.42	Large stones content	1.00
						Droughty	0.58
						Slope	0.01
115:							
Uzona---------------	75	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
116:							
Vessilla------------	65	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Slope	1.00
						Large stones content	0.20

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
116:							
Rock outcrop	25	Not rated		Not rated		Not rated	
117:							
Vosburg	85	Not limited		Not limited		Not limited	
118:							
Water	100	Not rated		Not rated		Not rated	
119:							
Water	70	Not rated		Not rated		Not rated	
Riverwash	20	Very limited		Very limited		Not rated	
		Too sandy	1.00	Too sandy	1.00		
		Gravel content	1.00	Gravel content	1.00		
		Depth to saturated zone	0.99	Depth to saturated zone	0.99		
		Flooding	0.40	Flooding	0.40		
120:							
Wauquie	85	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.84	Large stones content	0.84	Large stones content	1.00
		Large stones content	0.53	Large stones content	0.53	Slope	1.00
		Dusty	0.50	Dusty	0.50	Droughty	0.50
		Slope	0.02				
121:							
Wauquie	45	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.35	Large stones content	0.35	Large stones content	1.00
		Slope	0.02			Slope	1.00
						Droughty	0.17
Dolcan	40	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.99	Large stones content	0.99	Depth to bedrock	1.00
		Slope	0.02			Droughty	1.00
						Large stones content	1.00
						Slope	1.00
122:							
Wauquie	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.35	Large stones content	0.35	Large stones content	1.00
						Droughty	0.17

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
122:							
Dolcan	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.99	Large stones content	0.99	Slope	1.00
						Droughty	1.00
						Large stones content	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
123:							
Wetherill	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Dusty	0.50	Dusty	0.50	Slope	0.01
Atlatl	35	Not limited		Not limited		Very limited	
						Carbonate content	1.00
						Depth to bedrock	0.46
						Gravel content	0.18
						Slope	0.01
124:							
Wetherill	60	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Kucu	25	Not limited		Not limited		Very limited	
						Carbonate content	1.00
125:							
Wetherill	85	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
126:							
Wetherill	90	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
127:							
Wetherill	85	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
128:							
Wetherill	80	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
		Dusty	0.50	Dusty	0.50		
129:							
Wetherill	45	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
129:							
Wetoe	30	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Large stones content	1.00
		Large stones content	0.18	Large stones content	0.18	Droughty	0.09
						Slope	0.01
130:							
Wetoe	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Dusty	0.50	Dusty	0.50	Gravel content	1.00
						Droughty	0.95
						Large stones content	0.08
Nees	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones content	0.08	Large stones content	0.08	Slope	1.00
						Droughty	1.00
						Large stones content	1.00
						Gravel content	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
131:							
Yarts	85	Not limited		Not limited		Not limited	
132:							
Yogovuci	40	Somewhat limited		Somewhat limited		Not limited	
		Dusty	0.50	Dusty	0.50		
Taqoci	40	Somewhat limited		Somewhat limited		Very limited	
		Dusty	0.50	Dusty	0.50	Sodium content	1.00
133:							
Zigzag	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Gravel content	1.00
						Droughty	0.36
						Large stones content	0.03
Sideshow	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.56	Slope	1.00

Table 7b.--Recreation (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134:							
Zyme	85	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Gravel content	0.16
						Large stones content	0.03
						Slope	0.01
135:							
Zyme	45	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.78	Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.79
Katzine, dry	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Large stones content	0.01	Slope	1.00
		Large stones content	0.01			Droughty	0.97
						Large stones content	0.95
						Gravel content	0.90
136:							
Zyme	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.99	Depth to bedrock	1.00
						Gravel content	1.00
						Droughty	1.00
						Slope	1.00
						Large stones content	0.03

Table 8a.--Building Site Development (Part 1)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arabrab	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Longburn	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones content	0.66	Large stones content	0.66	Slope	1.00
		Slope	0.04	Slope	0.04	Large stones content	0.66
2:							
Awitava	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
3:							
Badland	75	Not rated		Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated		Not rated	
4:							
Barx	60	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
Gapmesa	30	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to hard bedrock	0.64
5:							
Barx	85	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Slope	0.04	Slope	1.00
		Slope	0.04			Shrink-swell	0.50
6:							
Barx	90	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.50			Shrink-swell	0.50
7:							
Battlerock	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8:							
Battlerock, saline-sodic	70	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9:							
Battlerock, slightly saline-sodic	70	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
10:							
Bebeevar	60	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.47		
Walrees	25	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
11:							
Benally	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
		Subsidence risk	0.17	Subsidence risk	0.17	Subsidence risk	0.17
12:							
Blackston	55	Not limited		Not limited		Not limited	
Camac	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.35		
Rock outcrop	15	Not rated		Not rated		Not rated	
13:							
Bluechief	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to hard bedrock	0.54
14:							
Bluechief	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to hard bedrock	0.54
15:							
Bluechief	75	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to hard bedrock	0.54
						Slope	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
16:							
Cahona	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.50
						Shrink-swell	0.50
Pulpit	35	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90
						Slope	0.50
17:							
Cahona	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Zigzag	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Shrink-swell	0.50	Slope	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Shrink-swell	0.50	Shrink-swell	0.50
18:							
Camac	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.15		
Kimbeto	35	Not limited		Not limited		Not limited	
Badland	15	Not rated		Not rated		Not rated	
19:							
Chimrock, sodic	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
20:							
Chimrock	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Subsidence risk	0.02	Shrink-swell	0.50
		Subsidence risk	0.02			Subsidence risk	0.02
21:							
Claysprings	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Shrink-swell	1.00
Badland	30	Not rated		Not rated		Not rated	

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
22:							
Claysprings	80	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Shrink-swell	1.00
23:							
Cowboy	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Subsidence risk	0.19	Subsidence risk	0.19	Subsidence risk	0.19
24:							
Cowboy	50	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Subsidence risk	0.20	Subsidence risk	0.20	Subsidence risk	0.20
Kava	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Shrink-swell	1.00
25:							
Cowboy	50	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Subsidence risk	0.20	Subsidence risk	0.20	Slope	0.50
						Subsidence risk	0.20
Kava	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Shrink-swell	1.00
						Slope	0.50
26:							
Decorock	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.02	Large stones content	0.02	Large stones content	0.02
		Subsidence risk	0.01	Subsidence risk	0.01	Subsidence risk	0.01
Salamander	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Subsidence risk severe	0.91	Subsidence risk severe	0.91	Subsidence risk severe	0.91

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
27:							
Decorock	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.02	Large stones content	0.02	Large stones content	0.02
		Subsidence risk	0.01	Subsidence risk	0.01	Subsidence risk	0.01
Salamander	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Subsidence risk severe	0.90	Subsidence risk severe	0.90	Subsidence risk severe	0.90
Badland	10	Not rated		Not rated		Not rated	
28:							
Dolcan	50	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Depth to soft bedrock	1.00
Kucu	30	Not limited		Not limited		Somewhat limited	
						Slope	0.50
29:							
Elias	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Yarts	40	Not limited		Not limited		Not limited	
30:							
Farb	55	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.01	Slope	0.01	Slope	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
31:							
Farb	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
Fruitland	20	Not limited		Not limited		Not limited	
32:							
Fardraw	85	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
33:							
Farview	60	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
						Slope	0.50
Beclabito	20	Not limited		Somewhat limited		Not limited	
				Depth to hard bedrock	0.05		
Rock outcrop	10	Not rated		Not rated		Not rated	
34:							
Farview	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
						Slope	0.50
Rock outcrop	35	Not rated		Not rated		Not rated	
35:							
Fluvents	55	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Fluvaquents	30	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
36:							
Gladel	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
						Slope	0.50
Pulpit	35	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90
						Slope	0.50
37:							
Greycap	40	Somewhat limited		Very limited		Somewhat limited	
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Nomad	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.46		

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
38:							
Gypsey	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Subsidence risk	0.16	Depth to soft bedrock	0.64	Subsidence risk	0.16
				Subsidence risk	0.16		
39:							
Gypsey	75	Somewhat limited		Somewhat limited		Very limited	
		Subsidence risk	0.12	Depth to soft bedrock	0.64	Slope	1.00
		Slope	0.04	Subsidence risk	0.12	Subsidence risk	0.12
				Slope	0.04		
40:							
Herm	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
41:							
Hope	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Subsidence risk severe	0.81	Subsidence risk severe	0.81	Subsidence risk severe	0.81
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
42:							
Hoskay	40	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	1.00	Slope	0.50
		Subsidence risk	0.42	Subsidence risk	0.42	Shrink-swell	0.50
						Subsidence risk	0.42
Patel	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
		Subsidence risk	0.01	Depth to soft bedrock	0.20	Subsidence risk	0.01
				Subsidence risk	0.01		
Badland	15	Not rated		Not rated		Not rated	
43:							
Ives	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
44:							
Jeddito	70	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
Escavada	15	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.03		

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
45:							
Jeddito	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
46:							
Juanalo	75	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
47:							
Katzine	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.15	Large stones content	0.15	Large stones content	0.15
48:							
Lazear	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to hard bedrock	1.00
		Large stones content	0.13	Large stones content	0.13	Large stones content	0.13
Rock outcrop	30	Not rated		Not rated		Not rated	
49:							
Lillings	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
						Slope	0.12
50:							
Littlehat	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.06		
Persayo	35	Somewhat limited		Very limited		Very limited	
		Shrink-swell	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
Badland	15	Not rated		Not rated		Not rated	
51:							
Littlehat	35	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.01	Depth to soft bedrock	0.35	Shrink-swell	0.50
				Slope	0.01		

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
51:							
Persayo	30	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Nataani	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Subsidence risk	0.05	Depth to soft bedrock	0.46	Subsidence risk	0.05
				Subsidence risk	0.05		
52:							
Littlewater	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.08	Large stones content	0.08	Large stones content	0.08
Rubbleland	30	Not rated		Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated		Not rated	
53:							
Longburn	65	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to hard bedrock	1.00
		Large stones content	0.66	Large stones content	0.66	Large stones content	0.66
Rock outcrop	20	Not rated		Not rated		Not rated	
54:							
Longburn	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones content	0.66	Large stones content	0.66	Large stones content	0.66
Rock outcrop	30	Not rated		Not rated		Not rated	
55:							
Mack	85	Not limited		Not limited		Not limited	
56:							
Mack	80	Not limited		Not limited		Not limited	
57:							
Mack	80	Not limited		Not limited		Not limited	

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
58:							
Mariano	75	Not limited		Not limited		Not limited	
59:							
Mariano	75	Not limited		Not limited		Not limited	
60:							
Mariano, Stony	80	Not limited		Not limited		Somewhat limited	
						Slope	0.12
61:							
Mikett	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
62:							
Mikett	85	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.63		
63:							
Mikim	90	Not limited		Not limited		Not limited	
64:							
Mikim	90	Not limited		Not limited		Somewhat limited	
						Slope	0.12
65:							
Monierco	75	Somewhat limited		Very limited		Somewhat limited	
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
						Slope	0.88
66:							
Morefield	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
67:							
Morefield	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
68:							
Nataani	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Subsidence risk	0.05	Subsidence risk	0.05	Slope	0.50
				Depth to soft bedrock	0.01	Subsidence risk	0.05
Yogovuci	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Subsidence risk	0.53	Subsidence risk	0.53	Subsidence risk	0.53
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.50
						Shrink-swell	0.50

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
69:							
Oagamati	70	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
				Depth to soft bedrock	0.10		
70:							
Pagayvay	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Large stones content	0.08	Large stones content	0.08	Large stones content	0.08
71:							
Persayo	35	Somewhat limited		Very limited		Very limited	
		Shrink-swell	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.01	Slope	0.01	Shrink-swell	0.50
Cairn	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Subsidence risk very severe	0.99	Subsidence risk very severe	0.99	Subsidence risk very severe	0.99
		Large stones content	0.09	Large stones content	0.09	Large stones content	0.09
Patel	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.03		
72:							
Persayo	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Shrink-swell	0.50	Slope	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Shrink-swell	0.50	Shrink-swell	0.50
73:							
Persayo	75	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Shrink-swell	0.50	Slope	0.88
						Shrink-swell	0.50

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74:							
Persayo	50	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Shrink-swell	0.50	Slope	0.63	Slope	1.00
		Depth to soft bedrock	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Yogovuci	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Subsidence risk	0.58	Subsidence risk	0.58	Subsidence risk	0.58
75:							
Picliff	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
						Slope	0.12
76:							
Pogo	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
77:							
Prater	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Dolcan	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Large stones content	0.15	Large stones content	0.15	Large stones content	0.15
78:							
Pulpit	80	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.01	Slope	0.01	Depth to hard bedrock	0.10
79:							
Ramper	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
80:							
Ravola	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
81:							
Ravola	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
82:							
Ravola	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
83:							
Redlands	85	Not limited		Not limited		Not limited	
84:							
Redlands	85	Not limited		Not limited		Not limited	
85:							
Rizno	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
						Slope	0.50
Gapmesa	35	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to hard bedrock	0.64
						Slope	0.50
86:							
Rock outcrop	95	Not rated		Not rated		Not rated	
87:							
Rock outcrop	55	Not rated		Not rated		Not rated	
Farview	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to hard bedrock	1.00
88:							
Romberg	45	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
Crosscan	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Slope	1.00

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
89:							
Romberg	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
Crosscan	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
90:							
Roubideau	80	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
		Depth to hard bedrock	0.01	Shrink-swell	0.50	Depth to hard bedrock	0.01
91:							
Sharps	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Depth to soft bedrock	0.29	Slope	1.00
				Slope	0.04		
92:							
Sharps, dry	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Depth to soft bedrock	0.29	Slope	1.00
				Slope	0.04		
Gapmesa	40	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to hard bedrock	0.64
93:							
Sheek	50	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Large stones content	1.00
Archuleta	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Large stones content	0.93	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Large stones content	0.93	Large stones content	0.93

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
94:							
Sheek	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
Archuleta	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.93	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Large stones content	0.93	Large stones content	0.93
Rock outcrop	20	Not rated		Not rated		Not rated	
95:							
Sheek	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
Archuleta	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.93	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Large stones content	0.93	Large stones content	0.93
Rock outcrop	20	Not rated		Not rated		Not rated	
96:							
Sheppard	90	Not limited		Not limited		Not limited	
97:							
Sideshow	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
98:							
Sideshow	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
						Slope	0.12
99:							
Simpatico	70	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
100:							
Snapill	85	Not limited		Not limited		Not limited	

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
101:							
Stephouse	55	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
						Slope	0.88
Rock outcrop	25	Not rated		Not rated		Not rated	
102:							
Strych	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
Eagleye	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Shrink-swell	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
103:							
Tocito	55	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Subsidence risk	0.01	Subsidence risk	0.01	Subsidence risk	0.01
Gullied land	30	Not rated		Not rated		Not rated	
104:							
Tohona	50	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Subsidence risk	0.24	Subsidence risk	0.24	Slope	0.88
				Depth to soft bedrock	0.20	Subsidence risk	0.24
Kimnoli	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.50
						Shrink-swell	0.50
Claysprings	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Shrink-swell	1.00

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
105:							
Torriorthents-------	90	Very limited		Very limited		Very limited	
		Large stones content	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Slope	1.00	Large stones content	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Large stones content	1.00
106:							
Torriorthents-------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Shrink-swell	1.00
Badland-------------	30	Not rated		Not rated		Not rated	
107:							
Towaoc--------------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Kwiavu--------------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
108:							
Towaoc--------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
109:							
Tragmon-------------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Sheek---------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
110:							
Tupuyci-------------	60	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Large stones content	0.98	Large stones content	0.98	Large stones content	0.98
Ives----------------	20	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
111:							
Typic Torriorthents-	60	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Large stones content	1.00	Slope	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Large stones content	1.00	Large stones content	1.00
Rock outcrop--------	25	Not rated		Not rated		Not rated	
112:							
Ustic Torrifluvents-	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
113:							
Ustic Torriorthents-	45	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.88
						Shrink-swell	0.50
Gullied land--------	40	Not rated		Not rated		Not rated	
114:							
Uzacol--------------	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Subsidence risk	0.01	Subsidence risk	0.01	Slope	0.50
						Subsidence risk	0.01
Zwicker-------------	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.01	Depth to soft bedrock	0.29	Slope	1.00
				Slope	0.01		
Claysprings---------	20	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Shrink-swell	1.00
		Slope	0.01	Slope	0.01	Slope	1.00
115:							
Uzona---------------	75	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Subsidence risk	0.01	Subsidence risk	0.01	Subsidence risk	0.01
116:							
Vessilla------------	65	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
116:							
Rock outcrop	25	Not rated		Not rated		Not rated	
117:							
Vosburg	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
118:							
Water	100	Not rated		Not rated		Not rated	
119:							
Water	70	Not rated		Not rated		Not rated	
Riverwash	20	Not rated		Not rated		Not rated	
120:							
Wauquie	85	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Large stones content	1.00
121:							
Wauquie	45	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Large stones content	1.00
Dolcan	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Slope	1.00
		Large stones content	0.15	Large stones content	0.15	Large stones content	0.15
122:							
Wauquie	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
Dolcan	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Large stones content	0.15	Large stones content	0.15	Large stones content	0.15

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
122:							
Rock outcrop	15	Not rated		Not rated		Not rated	
123:							
Wetherill	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.01	Slope	0.01	Slope	1.00
Atlatl	35	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.01	Slope	0.01	Depth to hard bedrock	0.46
124:							
Wetherill	60	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.22			Shrink-swell	0.22
						Slope	0.12
Kucu	25	Not limited		Not limited		Somewhat limited	
						Slope	0.12
125:							
Wetherill	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
126:							
Wetherill	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
127:							
Wetherill	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
128:							
Wetherill	80	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
129:							
Wetherill	45	Somewhat limited		Not limited		Somewhat limited	
		Shrink-swell	0.22			Shrink-swell	0.22
						Slope	0.12
Wetoe	30	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.68	Large stones content	0.68	Slope	1.00
		Slope	0.01	Slope	0.01	Large stones content	0.68

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
130:							
Wetoe	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Nees	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones content	0.32	Large stones content	0.32	Large stones content	0.32
Rock outcrop	15	Not rated		Not rated		Not rated	
131:							
Yarts	85	Not limited		Not limited		Not limited	
132:							
Yogovuci	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Subsidence risk	0.53	Subsidence risk	0.53	Subsidence risk	0.53
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Taqoci	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Subsidence risk	0.09	Subsidence risk	0.09	Subsidence risk	0.09
133:							
Zigzag	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Shrink-swell	1.00
Sideshow	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
134:							
Zyme	85	Somewhat limited		Very limited		Very limited	
		Shrink-swell	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.01	Slope	0.01	Shrink-swell	0.50
135:							
Zyme	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 8a.--Building Site Development (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting dwellings without basements		Limitations affecting dwellings with basements		Limitations affecting small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
135:							
Katzine, dry--------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.13	Large stones content	0.13	Large stones content	0.13
136:							
Zyme----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Shrink-swell	0.50	Slope	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 8b.--Building Site Development (Part 2)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arabrab	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.99
		Slope	0.04	Slope	0.04	Slope	0.04
						Large stones content	0.01
Longburn	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.66	Large stones content	0.66	Droughty	1.00
		Frost action	0.50	Cutbanks cave	0.10	Large stones content	1.00
		Slope	0.04	Slope	0.04	Slope	0.04
2:							
Awitava	85	Not limited		Very limited		Very limited	
				Cutbanks cave	1.00	Gravel content	1.00
						Droughty	1.00
						Carbonate content	1.00
						Large stones content	0.01
3:							
Badland	75	Not rated		Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated		Not rated	
4:							
Barx	60	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
Gapmesa	30	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Droughty	0.67
				Cutbanks cave	1.00	Depth to bedrock	0.65
5:							
Barx	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6:							
Barx	90	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
7:							
Battlerock	85	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Flooding	0.40				
8:							
Battlerock, saline-sodic	70	Somewhat limited		Very limited		Very limited	
		Frost action	0.50	Cutbanks cave	1.00	Sodium content	1.00
		Flooding	0.20			Salinity	1.00
9:							
Battlerock, slightly saline-sodic	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	0.10	Salinity	0.01
		Flooding	0.20				
10:							
Bebeevar	60	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Droughty	0.91
				Flooding	0.60	Flooding	0.60
				Depth to saturated zone	0.47	Large stones content	0.03
Walrees	25	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
		Shrink-swell	0.50	Depth to saturated zone	0.99	Salinity	0.50
		Frost action	0.50	Flooding	0.80	Droughty	0.02
11:							
Benally	80	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Sodium content	1.00
						Droughty	0.58
12:							
Blackston	55	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.73
						Large stones content	0.20
Camac	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to soft bedrock	0.35	Large stones content	1.00
				Cutbanks cave	0.10	Depth to bedrock	0.35
						Droughty	0.03
						Gravel content	0.01

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
12:							
Rock outcrop--------	15	Not rated		Not rated		Not rated	
13:							
Bluechief----------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to bedrock	0.54
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.10
14:							
Bluechief----------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to bedrock	0.54
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.10
15:							
Bluechief----------	75	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to bedrock	0.54
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.10
Rock outcrop--------	15	Not rated		Not rated		Not rated	
16:							
Cahona-------------	50	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
Pulpit-------------	35	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to bedrock	0.90
				Cutbanks cave	0.10		
17:							
Cahona-------------	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	0.10	Large stones content	0.20
				Slope	0.04	Gravel content	0.09
						Slope	0.04
Zigzag-------------	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	1.00
18:							
Camac--------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to soft bedrock	0.15	Large stones content	1.00
				Cutbanks cave	0.10	Depth to bedrock	0.16
						Gravel content	0.01

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
18:							
Kimbeto	35	Not limited		Somewhat limited		Very limited	
				Cutbanks cave	0.10	Sodium content	1.00
						Droughty	0.44
Badland	15	Not rated		Not rated		Not rated	
19:							
Chimrock, sodic	75	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Sodium content	1.00
		Frost action	0.50				
20:							
Chimrock	75	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
21:							
Claysprings	60	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Large stones content	1.00
						Sodium content	1.00
						Droughty	1.00
Badland	30	Not rated		Not rated		Not rated	
22:							
Claysprings	80	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Shrink-swell	1.00	Slope	1.00	Large stones content	1.00
		Slope	1.00	Cutbanks cave	0.10	Slope	1.00
						Droughty	0.58
23:							
Cowboy	85	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Too clayey	0.50	Too clayey	1.00
		Flooding	0.20	Cutbanks cave	0.10		
24:							
Cowboy	50	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Too clayey	0.50	Too clayey	1.00
				Cutbanks cave	0.10	Sodium content	1.00
Kava	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Droughty	0.90

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
25:							
Cowboy	50	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Too clayey	0.50	Too clayey	1.00
				Cutbanks cave	0.10	Sodium content	1.00
Kava	30	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Droughty	0.90
26:							
Decorock	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.02	Cutbanks cave	1.00	Gravel content	0.99
				Large stones content	0.02	Large stones content	0.46
						Droughty	0.02
Salamander	30	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.20
27:							
Decorock	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.02	Cutbanks cave	1.00	Gravel content	0.99
				Large stones content	0.02	Large stones content	0.46
						Droughty	0.02
Salamander	20	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.20
Badland	10	Not rated		Not rated		Not rated	
28:							
Dolcan	50	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
				Cutbanks cave	0.10	Slope	1.00
						Gravel content	0.96
						Large stones content	0.32
Kucu	30	Somewhat limited		Very limited		Very limited	
		Frost action	0.50	Cutbanks cave	1.00	Carbonate content	1.00
29:							
Elias	50	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Sodium content	1.00
		Frost action	0.50				

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
29:							
Yarts	40	Not limited		Somewhat limited		Not limited	
				Cutbanks cave	0.10		
30:							
Farb	55	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	0.01	Cutbanks cave	0.10	Droughty	1.00
				Slope	0.01	Slope	0.01
Rock outcrop	30	Not rated		Not rated		Not rated	
31:							
Farb	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
				Cutbanks cave	0.10	Gravel content	1.00
						Slope	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
Fruitland	20	Not limited		Somewhat limited		Not limited	
				Cutbanks cave	0.10		
32:							
Fardraw	85	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	0.12
33:							
Farview	60	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
						Droughty	1.00
						Gravel content	0.04
						Large stones content	0.01
Beclabito	20	Not limited		Somewhat limited		Very limited	
				Cutbanks cave	0.10	Sodium content	1.00
				Depth to hard bedrock	0.05		
Rock outcrop	10	Not rated		Not rated		Not rated	

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
34:							
Farview	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
						Droughty	1.00
						Gravel content	0.04
						Large stones content	0.01
Rock outcrop	35	Not rated		Not rated		Not rated	
35:							
Fluvents	55	Very limited		Very limited		Not rated	
		Flooding	1.00	Cutbanks cave	1.00		
				Flooding	0.60		
Fluvaquents	30	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.34
		Depth to saturated zone	0.19	Flooding	0.80	Depth to saturated zone	0.19
						Large stones content	0.01
36:							
Gladel	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
				Cutbanks cave	0.10	Droughty	1.00
Pulpit	35	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to bedrock	0.90
				Cutbanks cave	0.10		
37:							
Greycap	40	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Droughty	1.00
						Carbonate content	1.00
Nomad	40	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Depth to soft bedrock	0.46	Carbonate content	1.00
		Frost action	0.50	Cutbanks cave	0.10	Depth to bedrock	0.46
				Too clayey	0.04		
38:							
Gypsey	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to soft bedrock	0.64	Depth to bedrock	0.65
				Cutbanks cave	0.10		

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
39:							
Gypsey	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to soft bedrock	0.64	Depth to bedrock	0.65
		Slope	0.04	Cutbanks cave	0.10	Slope	0.04
				Slope	0.04		
40:							
Herm	90	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Cutbanks cave	0.10		
		Frost action	0.50				
41:							
Hope	75	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
42:							
Hoskay	40	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Sodium content	1.00
				Too clayey	0.03	Gravel content	0.04
						Droughty	0.01
						Large stones content	0.01
Patel	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Sodium content	1.00
		Shrink-swell	0.50	Depth to soft bedrock	0.20	Slope	1.00
				Cutbanks cave	0.10	Depth to bedrock	0.20
						Gravel content	0.11
						Droughty	0.01
Badland	15	Not rated		Not rated		Not rated	
43:							
Ives	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.32
		Flooding	0.20				
44:							
Jeddito	70	Somewhat limited		Very limited		Somewhat limited	
		Flooding	0.40	Cutbanks cave	1.00	Droughty	0.02
Escavada	15	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60	Droughty	0.37
				Depth to saturated zone	0.03		
45:							
Jeddito	85	Somewhat limited		Very limited		Not limited	
		Flooding	0.40	Cutbanks cave	1.00		

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
46:							
Juanalo	75	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
				Cutbanks cave	0.10	Droughty	1.00
						Carbonate content	1.00
						Gravel content	0.06
47:							
Katzine	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.99
		Large stones content	0.15	Large stones content	0.15	Large stones content	0.95
						Gravel content	0.90
48:							
Lazear	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Large stones content	1.00
		Large stones content	0.13	Large stones content	0.13	Droughty	1.00
						Slope	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
49:							
Lillings	90	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.40	Cutbanks cave	0.10		
50:							
Littlehat	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Sodium content	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Salinity	1.00
				Depth to soft bedrock	0.06	Slope	1.00
						Droughty	0.81
						Depth to bedrock	0.06
Persayo	35	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	0.98
		Slope	0.04	Slope	0.04	Slope	0.04
Badland	15	Not rated		Not rated		Not rated	

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
51:							
Littlehat	35	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Depth to soft bedrock	0.35	Sodium content	1.00
		Slope	0.01	Cutbanks cave	0.10	Salinity	1.00
				Slope	0.01	Droughty	0.96
						Depth to bedrock	0.35
						Slope	0.01
Persayo	30	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	1.00
Nataani	20	Not limited		Somewhat limited		Somewhat limited	
				Depth to soft bedrock	0.46	Depth to bedrock	0.46
				Cutbanks cave	0.10	Droughty	0.01
52:							
Littlewater	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Large stones content	0.99
		Large stones content	0.08	Large stones content	0.08	Gravel content	0.79
						Droughty	0.44
Rubbleland	30	Very limited		Very limited		Not rated	
		Large stones content	1.00	Large stones content	1.00		
		Slope	1.00	Slope	1.00		
				Dense layer	0.50		
Rock outcrop	15	Not rated		Not rated		Not rated	
53:							
Longburn	65	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
		Large stones content	0.66	Large stones content	0.66	Large stones content	1.00
		Frost action	0.50	Cutbanks cave	0.10	Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
54:							
Longburn	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.66	Large stones content	0.66	Droughty	1.00
		Frost action	0.50	Cutbanks cave	0.10	Large stones content	1.00
Rock outcrop	30	Not rated		Not rated		Not rated	
55:							
Mack	85	Not limited		Somewhat limited		Not limited	
				Cutbanks cave	0.10		
56:							
Mack	80	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
57:							
Mack	80	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
58:							
Mariano	75	Somewhat limited		Very limited		Very limited	
		Frost action	0.50	Cutbanks cave	1.00	Sodium content	1.00
						Carbonate content	1.00
						Droughty	0.57
59:							
Mariano	75	Somewhat limited		Very limited		Very limited	
		Frost action	0.50	Cutbanks cave	1.00	Sodium content	1.00
						Carbonate content	1.00
						Droughty	0.57
						Large stones content	0.01
60:							
Mariano, Stony	80	Somewhat limited		Very limited		Very limited	
		Frost action	0.50	Cutbanks cave	1.00	Sodium content	1.00
						Carbonate content	1.00
						Droughty	0.75
						Large stones content	0.20
61:							
Mikett	85	Somewhat limited		Very limited		Very limited	
		Frost action	0.50	Depth to saturated zone	1.00	Sodium content	1.00
		Depth to saturated zone	0.19	Cutbanks cave	0.10	Salinity	0.50
						Depth to saturated zone	0.19

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
62:							
Mikett	85	Somewhat limited Frost action	 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.63 0.10	Somewhat limited Salinity	 0.50
63:							
Mikim	90	Not limited		Somewhat limited Cutbanks cave	 0.10	Not limited	
64:							
Mikim	90	Not limited		Somewhat limited Cutbanks cave	 0.10	Not limited	
65:							
Monierco	75	Somewhat limited Depth to soft bedrock	 1.00	Very limited Depth to soft bedrock Cutbanks cave	 1.00 0.10	Very limited Depth to bedrock Droughty	 1.00 0.99
66:							
Morefield	90	Somewhat limited Shrink-swell Frost action	 0.50 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
67:							
Morefield	90	Somewhat limited Shrink-swell Frost action	 0.50 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
68:							
Nataani	60	Somewhat limited Frost action	 0.50	Somewhat limited Cutbanks cave Depth to soft bedrock	 0.10 0.01	Somewhat limited Depth to bedrock	 0.01
Yogovuci	20	Somewhat limited Shrink-swell Frost action	 0.50 0.50	Very limited Cutbanks cave	 1.00	Not limited	
69:							
Oagamati	70	Very limited Shrink-swell Frost action	 1.00 0.50	Somewhat limited Too clayey Cutbanks cave Depth to soft bedrock	 0.12 0.10 0.10	Very limited Sodium content Depth to bedrock	 1.00 0.10
70:							
Pagayvay	90	Somewhat limited Flooding Large stones content	 0.20 0.08	Very limited Cutbanks cave Large stones content	 1.00 0.08	Very limited Droughty Gravel content Large stones content	 1.00 1.00 0.99

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
71:							
Persayo	35	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	0.99
		Slope	0.01	Slope	0.01	Slope	0.01
Cairn	30	Somewhat limited		Very limited		Very limited	
		Large stones content	0.09	Cutbanks cave	1.00	Carbonate content	1.00
				Large stones content	0.09	Droughty	0.43
						Gravel content	0.11
						Large stones content	0.01
Patel	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Sodium content	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Gravel content	1.00
				Depth to soft bedrock	0.03	Slope	1.00
						Depth to bedrock	0.03
						Large stones content	0.01
72:							
Persayo	85	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	0.99
						Gravel content	0.32
73:							
Persayo	75	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	0.99
74:							
Persayo	50	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Droughty	0.99
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.63
Yogovuci	35	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
75:							
Picliff	80	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
				Cutbanks cave	0.10	Droughty	1.00

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
76:							
Pogo	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
		Flooding	1.00	Cutbanks cave	0.10		
77:							
Prater	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Large stones content	0.11
		Frost action	0.50				
Dolcan	15	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.15	Large stones content	0.15	Droughty	1.00
				Cutbanks cave	0.10	Large stones content	1.00
78:							
Pulpit	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to bedrock	0.10
		Slope	0.01	Cutbanks cave	0.10	Slope	0.01
				Slope	0.01		
79:							
Ramper	90	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.40	Cutbanks cave	0.10		
80:							
Ravola	85	Somewhat limited		Very limited		Very limited	
		Flooding	0.40	Cutbanks cave	1.00	Salinity	1.00
						Sodium content	1.00
81:							
Ravola	85	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
		Flooding	0.20				

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82:							
Ravola	80	Very limited Flooding	 1.00	Somewhat limited Flooding Cutbanks cave	 0.60 0.10	Somewhat limited Flooding	 0.60
83:							
Redlands	85	Somewhat limited Frost action	 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
84:							
Redlands	85	Somewhat limited Frost action	 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
85:							
Rizno	45	Very limited Depth to hard bedrock	 1.00	Very limited Depth to hard bedrock	 1.00	Very limited Depth to bedrock Droughty	 1.00 1.00
Gapmesa	35	Somewhat limited Depth to hard bedrock	 0.64	Very limited Depth to hard bedrock Cutbanks cave	 1.00 1.00	Somewhat limited Droughty Depth to bedrock	 0.67 0.65
86:							
Rock outcrop	95	Not rated		Not rated		Not rated	
87:							
Rock outcrop	55	Not rated		Not rated		Not rated	
Farview	35	Very limited Depth to hard bedrock Slope	 1.00 1.00	Very limited Depth to hard bedrock Slope	 1.00 1.00	Very limited Depth to bedrock Droughty Slope Gravel content	 1.00 1.00 1.00 0.24
88:							
Romberg	45	Very limited Large stones content Slope Frost action	 1.00 1.00 0.50	Very limited Large stones content Slope Cutbanks cave	 1.00 1.00 0.10	Very limited Large stones content Slope Droughty	 1.00 1.00 0.34
Crosscan	40	Very limited Depth to soft bedrock Slope	 1.00 1.00	Very limited Depth to soft bedrock Slope Cutbanks cave	 1.00 1.00 0.10	Very limited Depth to bedrock Droughty Large stones content Slope	 1.00 1.00 1.00 1.00

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
89:							
Romberg	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.34
Crosscan	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	1.00
						Large stones content	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
90:							
Roubideau	80	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Depth to bedrock	0.01
		Depth to hard bedrock	0.01	Cutbanks cave	0.10		
91:							
Sharps	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.04	Depth to soft bedrock	0.29	Depth to bedrock	0.29
				Cutbanks cave	0.10	Slope	0.04
				Slope	0.04		
92:							
Sharps, dry	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.04	Depth to soft bedrock	0.29	Depth to bedrock	0.29
				Cutbanks cave	0.10	Slope	0.04
				Slope	0.04		
Gapmesa	40	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Droughty	0.67
		Slope	0.04	Cutbanks cave	1.00	Depth to bedrock	0.65
				Slope	0.04	Slope	0.04
93:							
Sheek	50	Very limited		Very limited		Not rated	
		Large stones content	1.00	Large stones content	1.00		
		Slope	1.00	Slope	1.00		
				Cutbanks cave	0.10		

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
93:							
Archuleta	35	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.93	Large stones content	0.93	Droughty	0.87
94:							
Sheek	35	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Large stones content	1.00	Large stones content	1.00		
				Cutbanks cave	0.10		
Archuleta	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.93	Large stones content	0.93	Droughty	0.87
Rock outcrop	20	Not rated		Not rated		Not rated	
95:							
Sheek	40	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
		Large stones content	1.00	Large stones content	1.00		
				Cutbanks cave	0.10		
Archuleta	25	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.93	Large stones content	0.93	Droughty	0.87
Rock outcrop	20	Not rated		Not rated		Not rated	
96:							
Sheppard	90	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.74
97:							
Sideshow	90	Very limited		Very limited		Not limited	
		Shrink-swell	1.00	Cutbanks cave	1.00		
				Too clayey	0.12		

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
98:							
Sideshow	90	Very limited		Very limited		Not limited	
		Shrink-swell	1.00	Cutbanks cave	1.00		
				Too clayey	0.12		
99:							
Simpatico	70	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
		Flooding	0.40				
100:							
Snapill	85	Not limited		Somewhat limited		Very limited	
				Cutbanks cave	0.10	Sodium content	1.00
101:							
Stephouse	55	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
				Cutbanks cave	0.10	Droughty	1.00
						Gravel content	0.20
						Large stones content	0.01
Rock outcrop	25	Not rated		Not rated		Not rated	
102:							
Strych	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
				Cutbanks cave	0.10	Droughty	0.32
Eagleye	25	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Large stones content	1.00
						Droughty	0.99
						Gravel content	0.12
Rock outcrop	15	Not rated		Not rated		Not rated	
103:							
Tocito	55	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.40	Cutbanks cave	0.10		
Gullied land	30	Very limited		Very limited		Not rated	
		Slope	1.00	Slope	1.00		
				Cutbanks cave	0.10		

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
104:							
Tohona	50	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Too clayey	0.50	Sodium content	1.00
				Depth to soft bedrock	0.20	Gravel content	1.00
				Cutbanks cave	0.10	Depth to bedrock	0.20
						Droughty	0.18
						Large stones content	0.03
Kimnoli	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Shrink-swell	0.50			Droughty	1.00
Claysprings	15	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Large stones content	1.00
						Sodium content	1.00
						Droughty	1.00
105:							
Torriorthents	90	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
				Cutbanks cave	0.10	Slope	1.00
						Salinity	0.01
106:							
Torriorthents	55	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Droughty	0.74
Badland	30	Not rated		Not rated		Not rated	
107:							
Towaoc	45	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Gravel content	0.99
						Droughty	0.90
						Large stones content	0.68

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
107:							
Kwiavu	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Large stones content	0.08
108:							
Towaoc	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.99
						Droughty	0.90
						Large stones content	0.68
109:							
Tragmon	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Large stones content	0.03
Sheek	35	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
		Large stones content	1.00	Slope	1.00	Large stones content	1.00
				Large stones content	1.00		
110:							
Tupuyci	60	Somewhat limited		Very limited		Very limited	
		Large stones content	0.98	Cutbanks cave	1.00	Droughty	1.00
		Flooding	0.20	Large stones content	0.98	Salinity	0.01
Ives	20	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.32
		Flooding	0.20				
111:							
Typic Torriorthents	60	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Large stones content	1.00
		Large stones content	1.00	Large stones content	1.00	Droughty	1.00
				Cutbanks cave	0.10	Slope	1.00
						Salinity	0.01
Rock outcrop	25	Not rated		Not rated		Not rated	

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
112:							
Ustic Torrifluvents-	80	Somewhat limited		Very limited		Somewhat limited	
		Flooding	0.40	Cutbanks cave	1.00	Droughty	0.48
						Salinity	0.13
113:							
Ustic Torriorthents-	45	Somewhat limited		Somewhat limited		Not rated	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Flooding	0.40				
Gullied land--------	40	Not rated		Not rated		Not rated	
114:							
Uzacol--------------	35	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Too clayey	0.28	Sodium content	1.00
				Cutbanks cave	0.10		
Zwicker------------	30	Very limited		Very limited		Somewhat limited	
		Shrink-swell	1.00	Cutbanks cave	1.00	Large stones content	0.92
		Slope	0.01	Depth to soft bedrock	0.29	Depth to bedrock	0.29
				Too clayey	0.03	Slope	0.01
				Slope	0.01		
Claysprings---------	20	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Large stones content	1.00
		Slope	0.01	Slope	0.01	Droughty	0.58
						Slope	0.01
115:							
Uzona---------------	75	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Too clayey	0.88	Sodium content	1.00
				Cutbanks cave	0.10		
116:							
Vessilla------------	65	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
		Frost action	0.50			Slope	1.00
						Large stones content	0.20
Rock outcrop--------	25	Not rated		Not rated		Not rated	
117:							
Vosburg-------------	85	Not limited		Somewhat limited		Not limited	
				Cutbanks cave	0.10		

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
118:							
Water	100	Not rated		Not rated		Not rated	
119:							
Water	70	Not rated		Not rated		Not rated	
Riverwash	20	Very limited		Very limited		Not rated	
		Flooding	1.00	Depth to saturated zone	1.00		
		Depth to saturated zone	0.99	Cutbanks cave	1.00		
				Flooding	0.80		
120:							
Wauquie	85	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.50
121:							
Wauquie	45	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.17
Dolcan	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
		Large stones content	0.15	Large stones content	0.15	Large stones content	1.00
				Cutbanks cave	0.10	Slope	1.00
122:							
Wauquie	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.17
Dolcan	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.15	Large stones content	0.15	Droughty	1.00
				Cutbanks cave	0.10	Large stones content	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
123:							
Wetherill	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	0.10	Slope	0.01
		Slope	0.01	Slope	0.01		
Atlatl	35	Somewhat limited		Very limited		Very limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Carbonate content	1.00
		Depth to hard bedrock	0.46	Cutbanks cave	0.10	Depth to bedrock	0.46
		Slope	0.01	Slope	0.01	Gravel content	0.18
						Slope	0.01
124:							
Wetherill	60	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
		Shrink-swell	0.22				
Kucu	25	Somewhat limited		Very limited		Very limited	
		Frost action	0.50	Cutbanks cave	1.00	Carbonate content	1.00
125:							
Wetherill	85	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
126:							
Wetherill	90	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
127:							
Wetherill	85	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
128:							
Wetherill	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
129:							
Wetherill	45	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
		Shrink-swell	0.22				
Wetoe	30	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.68	Large stones content	0.68	Large stones content	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.09
		Slope	0.01	Slope	0.01	Slope	0.01

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
130:							
Wetoe	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	1.00
						Droughty	0.95
						Large stones content	0.08
Nees	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.32	Large stones content	0.32	Droughty	1.00
						Large stones content	1.00
						Gravel content	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
131:							
Yarts	85	Not limited		Somewhat limited		Not limited	
				Cutbanks cave	0.10		
132:							
Yogovuci	40	Somewhat limited		Very limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	1.00		
		Frost action	0.50				
Taqoci	40	Somewhat limited		Somewhat limited		Very limited	
		Frost action	0.50	Cutbanks cave	0.10	Sodium content	1.00
133:							
Zigzag	60	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10	Gravel content	1.00
						Droughty	0.36
						Large stones content	0.03
Sideshow	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Cutbanks cave	1.00		
				Too clayey	0.12		

Table 8b.--Building Site Development (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134:							
Zyme	85	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	1.00
		Slope	0.01	Slope	0.01	Gravel content	0.16
						Large stones content	0.03
						Slope	0.01
135:							
Zyme	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	0.79
		Frost action	0.50				
Katzine, dry	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.13	Cutbanks cave	1.00	Droughty	0.97
				Large stones content	0.13	Large stones content	0.95
						Gravel content	0.90
136:							
Zyme	80	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	1.00
						Slope	1.00
						Large stones content	0.03

Table 9a.--Sanitary Facilities (Part 1)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Arabrab	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.04	Slope	1.00
				Seepage	0.53
Longburn	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Large stones content	0.66	Slope	1.00
		Slope	0.04	Large stones content	0.99
2:					
Awitava	85	Not limited		Very limited	
				Seepage	1.00
				Slope	0.68
3:					
Badland	75	Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated	
4:					
Barx	60	Somewhat limited		Somewhat limited	
		Slow water movement	0.46	Seepage	0.53
				Slope	0.32
Gapmesa	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Seepage	1.00
				Slope	0.32
5:					
Barx	85	Somewhat limited		Very limited	
		Slow water movement	0.46	Slope	1.00
		Slope	0.04	Seepage	0.53
6:					
Barx	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.48	Seepage	0.52
				Slope	0.08

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
7:					
Battlerock	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Flooding	0.40
		Flooding	0.40	Slope	0.08
8:					
Battlerock, saline-sodic	70	Somewhat limited		Very limited	
		Flooding	0.20	Seepage	1.00
				Flooding	0.20
9:					
Battlerock, slightly saline-sodic	70	Somewhat limited		Very limited	
		Flooding	0.20	Seepage	1.00
				Flooding	0.20
10:					
Bebeevar	60	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.94	Seepage	1.00
				Depth to saturated zone	0.40
Walrees	25	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00		
11:					
Benally	80	Very limited		Somewhat limited	
		Slow water movement	1.00	Seepage	0.53
				Slope	0.08
12:					
Blackston	55	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
Camac	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	1.00	Seepage	0.53

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
12:					
Rock outcrop	15	Not rated		Not rated	
13:					
Bluechief	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Seepage	1.00
14:					
Bluechief	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Seepage	1.00
				Slope	0.32
15:					
Bluechief	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Seepage	1.00
				Slope	0.92
Rock outcrop	15	Not rated		Not rated	
16:					
Cahona	50	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.92
				Seepage	0.53
Pulpit	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.46	Slope	0.92
				Seepage	0.53
17:					
Cahona	35	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.04		
Zigzag	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
18:					
Camac	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	1.00	Seepage	0.53
Kimbeto	35	Somewhat limited		Somewhat limited	
		Slow water movement	0.46	Seepage	0.53
				Slope	0.08
Badland	15	Not rated		Not rated	
19:					
Chimrock, sodic	75	Somewhat limited		Somewhat limited	
		Slow water movement	0.72	Seepage	0.28
20:					
Chimrock	75	Somewhat limited		Very limited	
		Slow water movement	0.72	Seepage	1.00
21:					
Claysprings	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Badland	30	Not rated		Not rated	
22:					
Claysprings	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
23:					
Cowboy	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Flooding	0.20
		Flooding	0.20		
24:					
Cowboy	50	Very limited		Not limited	
		Slow water movement	1.00		
		Depth to bedrock	0.22		
Kava	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
25:					
Cowboy	50	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.92
		Depth to bedrock	0.22		
Kava	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Slope	0.92
26:					
Decorock	55	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Depth to soft bedrock	0.01
		Depth to bedrock	0.36		
		Large stones content	0.02		
Salamander	30	Somewhat limited		Very limited	
		Slow water movement	0.46	Seepage	1.00
27:					
Decorock	60	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Depth to soft bedrock	0.01
		Depth to bedrock	0.36		
		Large stones content	0.02		
Salamander	20	Somewhat limited		Very limited	
		Slow water movement	0.46	Seepage	1.00
				Slope	0.32
Badland	10	Not rated		Not rated	
28:					
Dolcan	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Kucu	30	Very limited		Very limited	
		Seepage	1.00	Seepage	1.00
				Slope	0.92

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
29:					
Elias	50	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.08
Yarts	40	Not limited		Very limited	
				Seepage	1.00
				Slope	0.08
30:					
Farb	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.01	Seepage	1.00
				Slope	1.00
Rock outcrop	30	Not rated		Not rated	
31:					
Farb	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
Rock outcrop	25	Not rated		Not rated	
Fruitland	20	Not limited		Very limited	
				Seepage	1.00
				Slope	0.32
32:					
Fardraw	85	Very limited		Very limited	
		Slow water movement	1.00	Large stones content	1.00
		Large stones content	1.00	Slope	0.68
33:					
Farview	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Slope	0.92
Beclabito	20	Very limited		Somewhat limited	
		Slow water movement	1.00	Seepage	0.53
		Depth to bedrock	0.47	Slope	0.08
				Depth to hard bedrock	0.05
Rock outcrop	10	Not rated		Not rated	

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
34:					
Farview	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Slope	0.92
Rock outcrop	35	Not rated		Not rated	
35:					
Fluvents	55	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	1.00	Seepage	1.00
		Seepage	1.00		
Fluvaquents	30	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
		Seepage	1.00		
36:					
Gladel	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Seepage	1.00
				Slope	0.92
Pulpit	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.46	Slope	0.92
				Seepage	0.53
37:					
Greycap	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Slope	0.08
Nomad	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	0.79	Seepage	1.00
				Slope	0.08

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
38:					
Gypsey	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	0.72	Slope	0.32
				Seepage	0.28
39:					
Gypsey	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	0.72	Slope	1.00
		Slope	0.04	Seepage	0.28
40:					
Herm	90	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.01
41:					
Hope	75	Somewhat limited		Somewhat limited	
		Slow water movement	0.72	Seepage	0.28
				Slope	0.08
42:					
Hoskay	40	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.92
Patel	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00		
Badland	15	Not rated		Not rated	
43:					
Ives	85	Somewhat limited		Very limited	
		Flooding	0.20	Seepage	1.00
				Flooding	0.20
44:					
Jeddito	70	Somewhat limited		Very limited	
		Slow water movement	0.46	Seepage	1.00
		Flooding	0.40	Flooding	0.40

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
44:					
Escavada	15	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	0.46	Seepage	0.53
		Depth to saturated zone	0.08		
45:					
Jeddito	85	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Flooding	0.40	Flooding	0.40
46:					
Juanalo	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Slope	0.32
47:					
Katzine	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.15	Seepage	1.00
				Large stones content	0.82
48:					
Lazear	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.13	Seepage	0.53
				Large stones content	0.21
Rock outcrop	30	Not rated		Not rated	
49:					
Lillings	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.72	Slope	0.68
		Flooding	0.40	Flooding	0.40
				Seepage	0.28
50:					
Littlehat	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.46	Seepage	0.53

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
50:					
Persayo	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	1.00
Badland	15	Not rated		Not rated	
51:					
Littlehat	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	0.46	Slope	1.00
		Slope	0.01	Seepage	0.53
Persayo	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Slope	0.08
Nataani	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	0.46	Seepage	0.53
				Slope	0.08
52:					
Littlewater	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
		Large stones content	0.08	Organic matter content	1.00
				Large stones content	0.78
Rubbleland	30	Very limited		Not rated	
		Filtering capacity	1.00		
		Slope	1.00		
		Large stones content	1.00		
		Seepage	1.00		
Rock outcrop	15	Not rated		Not rated	
53:					
Longburn	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.66	Large stones content	0.99

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
53:					
Rock outcrop--------	20	Not rated		Not rated	
54:					
Longburn----------	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.66	Large stones content	0.99
Rock outcrop--------	30	Not rated		Not rated	
55:					
Mack----------	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.46	Seepage	0.53
				Slope	0.08
56:					
Mack----------	80	Somewhat limited		Very limited	
		Slow water movement	0.46	Seepage	1.00
57:					
Mack----------	80	Somewhat limited		Very limited	
		Slow water movement	0.46	Seepage	1.00
				Slope	0.32
58:					
Mariano----------	75	Not limited		Very limited	
				Seepage	1.00
59:					
Mariano----------	75	Not limited		Very limited	
				Seepage	1.00
				Slope	0.32
60:					
Mariano, Stony------	80	Not limited		Very limited	
				Seepage	1.00
				Slope	0.68
61:					
Mikett----------	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00		

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
62:					
Mikett	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	0.99		
63:					
Mikim	90	Very limited		Not limited	
		Slow water movement	1.00		
64:					
Mikim	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.68
65:					
Monierco	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Slope	1.00
				Seepage	1.00
66:					
Morefield	90	Very limited		Not limited	
		Slow water movement	1.00		
67:					
Morefield	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.68
68:					
Nataani	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Seepage	1.00
				Slope	0.92
Yogovuci	20	Somewhat limited		Very limited	
		Slow water movement	0.79	Seepage	1.00
				Slope	0.92
69:					
Oagamati	70	Very limited		Very limited	
		Slow water movement	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	0.32

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
70:					
Pagayvay	90	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Flooding	0.20	Large stones content	0.78
		Large stones content	0.08	Flooding	0.20
				Slope	0.08
71:					
Persayo	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.01	Slope	1.00
Cairn	30	Somewhat limited		Very limited	
		Depth to bedrock	0.91	Seepage	1.00
		Large stones content	0.09	Depth to soft bedrock	0.77
				Slope	0.08
				Large stones content	0.07
Patel	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	1.00		
72:					
Persayo	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
73:					
Persayo	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Slope	1.00
74:					
Persayo	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.63	Slope	1.00
Yogovuci	35	Somewhat limited		Very limited	
		Slow water movement	0.72	Seepage	1.00
				Slope	0.08

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
75:					
Picliff	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Seepage	1.00
				Slope	0.68
76:					
Pogo	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00		
77:					
Prater	60	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00		
Dolcan	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.15		
78:					
Pulpit	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.46	Slope	1.00
		Slope	0.01	Seepage	0.53
79:					
Ramper	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Flooding	0.40
		Flooding	0.40		
80:					
Ravola	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Flooding	0.40
		Flooding	0.40		
81:					
Ravola	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Flooding	0.20
		Flooding	0.20		

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
82:					
Ravola	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	0.46	Seepage	0.53
83:					
Redlands	85	Not limited		Very limited	
				Seepage	1.00
84:					
Redlands	85	Not limited		Very limited	
				Seepage	1.00
				Slope	0.32
85:					
Rizno	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Slope	0.92
Gapmesa	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Seepage	1.00
				Slope	0.92
86:					
Rock outcrop	95	Not rated		Not rated	
87:					
Rock outcrop	55	Not rated		Not rated	
Farview	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
88:					
Romberg	45	Very limited		Very limited	
		Slow water movement	1.00	Large stones content	1.00
		Large stones content	1.00	Slope	1.00
		Slope	1.00		
Crosscan	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
89:					
Romberg	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00	Large stones content	1.00
		Large stones content	1.00		
Crosscan	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Rock outcrop	20	Not rated		Not rated	
90:					
Roubideau	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Seepage	0.53
				Slope	0.32
91:					
Sharps	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	0.04	Seepage	0.53
92:					
Sharps, dry	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	0.04	Seepage	0.53
Gapmesa	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.04	Seepage	1.00
				Slope	1.00
93:					
Sheek	50	Very limited		Very limited	
		Slow water movement	1.00	Large stones content	1.00
		Large stones content	1.00	Slope	1.00
		Slope	1.00		

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
93:					
Archuleta	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.93	Large stones content	1.00
94:					
Sheek	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00	Large stones content	1.00
		Large stones content	1.00		
Archuleta	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.93	Large stones content	1.00
Rock outcrop	20	Not rated		Not rated	
95:					
Sheek	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00	Large stones content	1.00
		Large stones content	1.00		
Archuleta	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.93	Large stones content	1.00
Rock outcrop	20	Not rated		Not rated	
96:					
Sheppard	90	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.32
97:					
Sideshow	90	Very limited		Not limited	
		Slow water movement	1.00		

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
98:					
Sideshow	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.68
99:					
Simpatico	70	Very limited		Somewhat limited	
		Slow water movement	1.00	Seepage	0.53
		Flooding	0.40	Flooding	0.40
100:					
Snapill	85	Somewhat limited		Somewhat limited	
		Depth to bedrock	0.63	Seepage	0.53
		Slow water movement	0.46	Slope	0.32
				Depth to soft bedrock	0.18
101:					
Stephouse	55	Very limited		Not rated	
		Depth to bedrock	1.00		
		Seepage	1.00		
Rock outcrop	25	Not rated		Not rated	
102:					
Strych	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00
				Seepage	1.00
Eagleye	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Rock outcrop	15	Not rated		Not rated	
103:					
Tocito	55	Somewhat limited		Somewhat limited	
		Slow water movement	0.46	Seepage	0.53
		Flooding	0.40	Flooding	0.40
Gullied land	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.46	Seepage	0.53

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
104:					
Tohona	50	Very limited		Very limited	
		Slow water movement	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
Kimnoli	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
				Slope	0.92
Claysprings	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
105:					
Torriorthents	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Large stones content	1.00	Slope	1.00
		Slope	1.00	Large stones content	1.00
				Seepage	0.19
106:					
Torriorthents	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.19
Badland	30	Not rated		Not rated	
107:					
Towaoc	45	Very limited		Very limited	
		Seepage	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
				Large stones content	0.01
Kwiavu	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.99	Seepage	1.00
108:					
Towaoc	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00
				Large stones content	0.01

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
109:					
Tragmon	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.46	Seepage	0.53
Sheek	35	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Large stones content	1.00
		Large stones content	1.00		
110:					
Tupuyci	60	Somewhat limited		Very limited	
		Large stones content	0.98	Large stones content	1.00
		Flooding	0.20	Seepage	1.00
				Flooding	0.20
Ives	20	Somewhat limited		Very limited	
		Flooding	0.20	Seepage	1.00
				Flooding	0.20
111:					
Typic Torriorthents-	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00
				Seepage	0.19
Rock outcrop	25	Not rated		Not rated	
112:					
Ustic Torrifluvents-	80	Somewhat limited		Very limited	
		Flooding	0.40	Seepage	1.00
				Flooding	0.40
113:					
Ustic Torriorthents-	45	Somewhat limited		Very limited	
		Slow water movement	0.72	Slope	1.00
		Flooding	0.40	Flooding	0.40
				Seepage	0.28
Gullied land	40	Not rated		Not rated	
114:					
Uzacol	35	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.92
		Depth to bedrock	0.30		

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
114:					
Zwicker	30	Very limited		Very limited	
		Slow water movement	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.01		
Claysprings	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.01	Slope	1.00
115:					
Uzona	75	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.32
116:					
Vessilla	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
Rock outcrop	25	Not rated		Not rated	
117:					
Vosburg	85	Somewhat limited		Very limited	
		Slow water movement	0.46	Seepage	1.00
				Slope	0.92
118:					
Water	100	Not rated		Not rated	
119:					
Water	70	Not rated		Not rated	
Riverwash	20	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
		Seepage	1.00		
120:					
Wauquie	85	Very limited		Very limited	
		Large stones content	1.00	Slope	1.00
		Slope	1.00	Large stones content	1.00
		Slow water movement	0.46	Seepage	0.53

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
121:					
Wauquie	45	Very limited		Very limited	
		Large stones content	1.00	Slope	1.00
		Slope	1.00	Large stones content	1.00
		Slow water movement	0.46	Seepage	0.53
Dolcan	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.15		
122:					
Wauquie	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00
		Slow water movement	0.46	Seepage	0.53
Dolcan	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.15		
Rock outcrop	15	Not rated		Not rated	
123:					
Wetherill	50	Somewhat limited		Very limited	
		Slow water movement	0.46	Slope	1.00
		Slope	0.01	Seepage	0.53
Atlatl	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.46	Seepage	1.00
		Slope	0.01	Slope	1.00
124:					
Wetherill	60	Somewhat limited		Somewhat limited	
		Slow water movement	0.46	Slope	0.68
				Seepage	0.53

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
124:					
Kucu	25	Very limited		Very limited	
		Seepage	1.00	Seepage	1.00
				Slope	0.68
125:					
Wetherill	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.68
				Seepage	0.53
126:					
Wetherill	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.99	Seepage	0.01
127:					
Wetherill	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.99	Slope	0.68
				Seepage	0.01
128:					
Wetherill	80	Somewhat limited		Very limited	
		Slow water movement	0.99	Slope	1.00
		Slope	0.04	Seepage	0.01
129:					
Wetherill	45	Somewhat limited		Somewhat limited	
		Slow water movement	0.46	Slope	0.68
				Seepage	0.53
Wetoe	30	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Large stones content	0.68	Large stones content	1.00
		Slope	0.01		
130:					
Wetoe	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
				Seepage	1.00
Nees	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Large stones content	0.32	Large stones content	0.30

Table 9a.--Sanitary Facilities (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
130:					
Rock outcrop	15	Not rated		Not rated	
131:					
Yarts	85	Not limited		Very limited	
				Seepage	1.00
				Slope	0.32
132:					
Yogovuci	40	Somewhat limited		Very limited	
		Slow water movement	0.79	Seepage	1.00
				Slope	0.08
Taqoci	40	Somewhat limited		Very limited	
		Slow water movement	0.72	Seepage	1.00
				Slope	0.08
133:					
Zigzag	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Sideshow	30	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00		
134:					
Zyme	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.01	Slope	1.00
135:					
Zyme	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
Katzine, dry	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	0.13	Seepage	1.00
				Large stones content	0.76
136:					
Zyme	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00

Table 9b.--Sanitary Facilities (Part 2)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arabrab	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Slope	0.04
Longburn	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Large stones content	0.66	Slope	0.04	Large stones content	0.66
		Too clayey	0.50			Too clayey	0.50
		Slope	0.04			Slope	0.04
2:							
Awitava	85	Not limited		Not limited		Very limited	
						Gravel content	1.00
						Seepage	0.22
3:							
Badland	75	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	0.63		
Rock outcrop	15	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	0.96		
4:							
Barx	60	Not limited		Not limited		Not limited	
Gapmesa	30	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
5:							
Barx	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.04	Slope	0.04	Slope	0.04
6:							
Barx	90	Not limited		Not limited		Not limited	
7:							
Battlerock	85	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.40	Flooding	0.40		
8:							
Battlerock, saline-sodic	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Flooding	0.20	Flooding	0.20	Seepage	0.22

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9:							
Battlerock, slightly saline-sodic	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Flooding	0.20	Flooding	0.20	Seepage	0.52
10:							
Bebeevar	60	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too sandy	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.52
		Too sandy	1.00				
Walrees	25	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too sandy	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00	Depth to saturated zone	0.24
		Too sandy	1.00				
11:							
Benally	80	Very limited		Not limited		Not limited	
		Excess salt	1.00				
12:							
Blackston	55	Somewhat limited		Not limited		Very limited	
		Too sandy	0.50			Seepage	1.00
						Too sandy	0.50
						Gravel content	0.24
Camac	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00			Slope	1.00
Rock outcrop	15	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	0.96		
13:							
Bluechief	80	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
						Seepage	0.52
14:							
Bluechief	80	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
						Seepage	0.52
15:							
Bluechief	75	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
						Seepage	0.52

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
15:							
Rock outcrop	15	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
16:							
Cahona	50	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
Pulpit	35	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
17:							
Cahona	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Slope	0.04
Zigzag	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
18:							
Camac	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00			Slope	1.00
Kimbeto	35	Not limited		Not limited		Not limited	
Badland	15	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	0.96		
19:							
Chimrock, sodic	75	Not limited		Not limited		Not limited	
20:							
Chimrock	75	Not limited		Not limited		Very limited	
						Seepage	1.00
21:							
Claysprings	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00			Slope	1.00
						Hard to compact	1.00
Badland	30	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	0.63		
22:							
Claysprings	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Hard to compact	1.00
						Slope	1.00

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
23:							
Cowboy	85	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.20	Flooding	0.20		
24:							
Cowboy	50	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Hard to compact	1.00
Kava	30	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
25:							
Cowboy	50	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Hard to compact	1.00
Kava	30	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
26:							
Decorock	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00			Large stones content	0.23
		Large stones content	0.23			Gravel content	0.11
						Depth to bedrock	0.01
Salamander	30	Not limited		Not limited		Very limited	
						Seepage	1.00
						Gravel content	0.99
27:							
Decorock	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00			Large stones content	0.23
		Large stones content	0.23			Gravel content	0.11
						Depth to bedrock	0.01
Salamander	20	Not limited		Not limited		Very limited	
						Seepage	1.00
						Gravel content	0.99
Badland	10	Not rated		Very limited		Not rated	
				Slope	1.00		
				Depth to bedrock	1.00		
28:							
Dolcan	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
28:							
Kucu	30	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Gravel content	0.96
						Seepage	0.52
29:							
Elias	50	Not limited		Not limited		Not limited	
Yarts	40	Not limited		Not limited		Somewhat limited	
						Seepage	0.52
30:							
Farb	55	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.01	Depth to bedrock	1.00
		Slope	0.01			Seepage	0.52
						Slope	0.01
Rock outcrop	30	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	0.01		
31:							
Farb	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
						Seepage	0.52
						Gravel content	0.44
Rock outcrop	25	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	1.00		
Fruitland	20	Not limited		Not limited		Somewhat limited	
						Seepage	0.52
32:							
Fardraw	85	Very limited		Not limited		Very limited	
		Large stones	1.00			Large stones	1.00
		Too clayey	0.50			Too clayey	0.50
33:							
Farview	60	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
		Too sandy	0.50			Seepage	1.00
						Too sandy	0.50
Beclabito	20	Very limited		Not limited		Somewhat limited	
		Depth to bedrock	1.00			Depth to bedrock	0.05
Rock outcrop	10	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	1.00		

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
34:							
Farview	50	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
		Too sandy	0.50			Seepage	1.00
						Too sandy	0.50
Rock outcrop	35	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	1.00		
35:							
Fluvents	55	Not rated		Very limited		Very limited	
				Flooding	1.00	Seepage	1.00
				Seepage	1.00	Gravel content	0.54
						Too sandy	0.50
Fluvaquents	30	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Seepage	1.00	Seepage	1.00	Gravel content	0.66
36:							
Gladel	45	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
						Seepage	0.52
Pulpit	35	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
37:							
Greycap	40	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
						Carbonate content	1.00
						Seepage	0.22
Nomad	40	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
						Carbonate content	1.00
38:							
Gypsey	80	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
39:							
Gypsey	75	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.04	Depth to bedrock	1.00
		Slope	0.04			Slope	0.04
40:							
Herm	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
41:							
Hope	75	Not limited		Not limited		Not limited	
42:							
Hoskay	40	Not limited		Not limited		Very limited	
						Hard to compact	1.00
Patel	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
Badland	15	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	1.00		
43:							
Ives	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.50	Flooding	0.20	Seepage	0.52
		Flooding	0.20			Too sandy	0.50
44:							
Jeddito	70	Very limited		Somewhat limited		Very limited	
		Too sandy	1.00	Flooding	0.40	Too sandy	1.00
		Flooding	0.40				
Escavada	15	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too sandy	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Too sandy	1.00				
45:							
Jeddito	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.50	Flooding	0.40	Too sandy	0.50
		Flooding	0.40				
46:							
Juanalo	75	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
						Carbonate content	1.00
						Seepage	0.52
47:							
Katzine	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.17			Gravel content	1.00
						Large stones content	0.17
						Seepage	0.01

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
48:							
Lazear	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
		Large stones content	0.13			Large stones content	0.13
Rock outcrop	30	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	1.00		
49:							
Lillings	90	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.40	Flooding	0.40		
50:							
Littlehat	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
		Excess salt	1.00				
Persayo	35	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.04	Depth to bedrock	1.00
		Slope	0.04			Slope	0.04
Badland	15	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	0.04		
51:							
Littlehat	35	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.01	Depth to bedrock	1.00
		Excess salt	1.00			Slope	0.01
		Slope	0.01				
Persayo	30	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
Nataani	20	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
52:							
Littlewater	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	0.80
		Large stones content	0.08			Seepage	0.63
						Large stones content	0.08
Rubbleland	30	Not rated		Very limited		Not rated	
				Slope	1.00		
				Seepage	1.00		

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
52:							
Rock outcrop--------	15	Not rated		Very limited		Not rated	
				Slope	1.00		
				Depth to bedrock	1.00		
53:							
Longburn----------	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.66			Large stones content	0.66
		Too clayey	0.50			Too clayey	0.50
Rock outcrop--------	20	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	1.00		
54:							
Longburn----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Large stones content	0.66			Large stones content	0.66
		Too clayey	0.50			Too clayey	0.50
Rock outcrop--------	30	Not rated		Very limited		Not rated	
				Slope	1.00		
				Depth to bedrock	1.00		
55:							
Mack----------	85	Not limited		Not limited		Not limited	
56:							
Mack----------	80	Not limited		Not limited		Not limited	
57:							
Mack----------	80	Not limited		Not limited		Not limited	
58:							
Mariano----------	75	Not limited		Not limited		Very limited	
						Gravel content	0.99
						Seepage	0.22
59:							
Mariano----------	75	Not limited		Not limited		Very limited	
						Gravel content	0.99
						Seepage	0.22
60:							
Mariano, Stony------	80	Not limited		Not limited		Very limited	
						Gravel content	0.99
						Seepage	0.22

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
61:							
Mikett	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.86
62:							
Mikett	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Not limited	
63:							
Mikim	90	Not limited		Not limited		Not limited	
64:							
Mikim	90	Not limited		Not limited		Not limited	
65:							
Monierco	75	Very limited Depth to bedrock	1.00	Not limited		Very limited Depth to bedrock Seepage	1.00 0.01
66:							
Morefield	90	Not limited		Not limited		Not limited	
67:							
Morefield	90	Not limited		Not limited		Not limited	
68:							
Nataani	60	Very limited Depth to bedrock	1.00	Not limited		Very limited Depth to bedrock Seepage	1.00 0.22
Yogovuci	20	Not limited		Not limited		Very limited Seepage	1.00
69:							
Oagamati	70	Very limited Depth to bedrock	1.00	Not limited		Very limited Depth to bedrock	1.00
70:							
Pagayvay	90	Somewhat limited Flooding Large stones content	0.20 0.08	Somewhat limited Flooding	0.20	Very limited Gravel content Seepage Large stones content	1.00 1.00 0.08
71:							
Persayo	35	Very limited Depth to bedrock Slope	1.00 0.01	Somewhat limited Slope	0.01	Very limited Depth to bedrock Slope	1.00 0.01

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
71:							
Cairn	30	Very limited		Not limited		Somewhat limited	
		Depth to bedrock	1.00			Depth to bedrock	0.77
		Large stones content	0.14			Seepage	0.52
						Large stones content	0.14
						Gravel content	0.01
Patel	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
72:							
Persayo	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
73:							
Persayo	75	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
74:							
Persayo	50	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.63	Depth to bedrock	1.00
		Slope	0.63			Slope	0.63
Yogovuci	35	Not limited		Not limited		Somewhat limited	
						Seepage	0.52
75:							
Picliff	80	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
						Gravel content	0.81
						Seepage	0.01
76:							
Pogo	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
77:							
Prater	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Dolcan	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00			Slope	1.00
		Large stones content	0.15			Large stones content	0.15

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
78:							
Pulpit	80	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.01	Depth to bedrock	1.00
		Slope	0.01			Slope	0.01
79:							
Ramper	90	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.40	Flooding	0.40		
80:							
Ravola	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.50	Flooding	0.40	Too sandy	0.50
		Flooding	0.40				
81:							
Ravola	85	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.20	Flooding	0.20		
82:							
Ravola	80	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
83:							
Redlands	85	Not limited		Not limited		Somewhat limited	
						Seepage	0.22
84:							
Redlands	85	Not limited		Not limited		Somewhat limited	
						Seepage	0.22
85:							
Rizno	45	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
						Seepage	0.52
Gapmesa	35	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
86:							
Rock outcrop	95	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	1.00		
87:							
Rock outcrop	55	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	1.00		
Farview	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
						Seepage	1.00
						Gravel content	0.24

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
88:							
Romberg	45	Very limited		Very limited		Very limited	
		Large stones	1.00	Slope	1.00	Large stones	1.00
		Slope	1.00			Slope	1.00
Crosscan	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
						Gravel content	0.97
89:							
Romberg	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	1.00			Large stones	1.00
Crosscan	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00			Slope	1.00
						Gravel content	0.97
Rock outcrop	20	Not rated		Very limited		Not rated	
				Slope	1.00		
				Depth to bedrock	1.00		
90:							
Roubideau	80	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
91:							
Sharps	80	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.04	Depth to bedrock	1.00
		Slope	0.04			Slope	0.04
92:							
Sharps, dry	45	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.04	Depth to bedrock	1.00
		Slope	0.04			Slope	0.04
Gapmesa	40	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.04	Depth to bedrock	1.00
		Slope	0.04			Slope	0.04
93:							
Sheek	50	Very limited		Very limited		Very limited	
		Large stones	1.00	Slope	1.00	Large stones	1.00
		Slope	1.00			Slope	1.00
		Too clayey	0.50			Too clayey	0.50
Archuleta	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.93			Large stones content	0.93

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
94:							
Sheek	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	1.00			Large stones	1.00
		Too clayey	0.50			Too clayey	0.50
Archuleta	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Large stones content	0.93			Large stones content	0.93
Rock outcrop	20	Not rated		Very limited		Not rated	
				Slope	1.00		
				Depth to bedrock	1.00		
95:							
Sheek	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	1.00			Large stones	1.00
		Too clayey	0.50			Too clayey	0.50
Archuleta	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Large stones content	0.93			Large stones content	0.93
Rock outcrop	20	Not rated		Very limited		Not rated	
				Slope	1.00		
				Depth to bedrock	1.00		
96:							
Sheppard	90	Somewhat limited		Not limited		Very limited	
		Too sandy	0.50			Seepage	1.00
						Too sandy	0.50
97:							
Sideshow	90	Not limited		Not limited		Not limited	
98:							
Sideshow	90	Not limited		Not limited		Not limited	
99:							
Simpatico	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Flooding	0.40	Too clayey	0.50
		Flooding	0.40				
100:							
Snapill	85	Very limited		Not limited		Somewhat limited	
		Depth to bedrock	1.00			Depth to bedrock	0.18

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
101:							
Stephouse	55	Very limited		Very limited		Not rated	
		Depth to bedrock	1.00	Depth to bedrock	1.00		
		Seepage	1.00				
Rock outcrop	25	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
102:							
Strych	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	1.00			Large stones	1.00
						Seepage	0.52
Eagleye	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00			Slope	1.00
						Hard to compact	1.00
Rock outcrop	15	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	0.96		
103:							
Tocito	55	Somewhat limited		Somewhat limited		Not limited	
		Flooding	0.40	Flooding	0.40		
Gullied land	30	Not rated		Very limited		Very limited	
				Slope	1.00	Slope	1.00
104:							
Tohona	50	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
						Hard to compact	1.00
Kimnoli	20	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Depth to bedrock	1.00
		Too sandy	0.50			Seepage	1.00
						Too sandy	0.50
Claysprings	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00			Slope	1.00
						Hard to compact	1.00
105:							
Torriorthents	90	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Large stones	1.00			Large stones	1.00
		Slope	1.00			Slope	1.00

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
106:							
Torriorthents	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00			Slope	1.00
Badland	30	Not rated		Very limited		Not rated	
				Slope	1.00		
				Depth to bedrock	1.00		
107:							
Towaoc	45	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Gravel content	0.99
						Seepage	0.63
Kwiavu	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
108:							
Towaoc	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	0.99
						Seepage	0.63
109:							
Tragmon	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Sheek	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	1.00			Large stones	1.00
		Too clayey	0.50			Too clayey	0.50
110:							
Tupuyci	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.99	Flooding	0.20	Large stones content	0.99
		Flooding	0.20			Seepage	0.22
						Gravel content	0.02
Ives	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.50	Flooding	0.20	Seepage	0.52
		Flooding	0.20			Too sandy	0.50
111:							
Typic Torriorthents-	60	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
		Large stones	1.00			Large stones	1.00
Rock outcrop	25	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	1.00		

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
112:							
Ustic Torrifluvents-	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.50	Flooding	0.40	Seepage	0.52
		Flooding	0.40			Too sandy	0.50
						Gravel content	0.03
113:							
Ustic Torriorthents-	45	Not rated		Somewhat limited		Very limited	
				Flooding	0.40	Gravel content	1.00
Gullied land--------	40	Not rated		Very limited		Not rated	
				Slope	1.00		
				Flooding	0.40		
114:							
Uzacol--------------	35	Very limited		Not limited		Very limited	
		Depth to bedrock	1.00			Hard to compact	1.00
Zwicker-------------	30	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.01	Depth to bedrock	1.00
		Slope	0.01			Slope	0.01
Claysprings---------	20	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.01	Depth to bedrock	1.00
		Slope	0.01			Hard to compact	1.00
						Slope	0.01
115:							
Uzona---------------	75	Very limited		Not limited		Very limited	
		Excess salt	1.00			Hard to compact	1.00
116:							
Vessilla------------	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
						Seepage	0.52
Rock outcrop--------	25	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	1.00		
117:							
Vosburg-------------	85	Not limited		Not limited		Not limited	
118:							
Water---------------	100	Not rated		Not limited		Not rated	
119:							
Water---------------	70	Not rated		Not limited		Not rated	

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
119:							
Riverwash	20	Not rated		Very limited		Very limited	
				Flooding	1.00	Depth to saturated zone	1.00
				Depth to saturated zone	1.00	Too sandy	1.00
				Seepage	1.00	Seepage	1.00
						Gravel content	1.00
120:							
Wauquie	85	Very limited		Very limited		Very limited	
		Large stones	1.00	Slope	1.00	Large stones	1.00
		Slope	1.00			Slope	1.00
121:							
Wauquie	45	Very limited		Very limited		Very limited	
		Large stones	1.00	Slope	1.00	Large stones	1.00
		Slope	1.00			Slope	1.00
Dolcan	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
		Large stones content	0.15			Large stones content	0.15
122:							
Wauquie	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	1.00			Large stones	1.00
Dolcan	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00			Slope	1.00
		Large stones content	0.15			Large stones content	0.15
Rock outcrop	15	Not rated		Very limited		Not rated	
				Slope	1.00		
				Depth to bedrock	1.00		
123:							
Wetherill	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.01	Slope	0.01	Slope	0.01
Atlatl	35	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.01	Depth to bedrock	1.00
		Slope	0.01			Carbonate content	1.00
						Slope	0.01
124:							
Wetherill	60	Not limited		Not limited		Not limited	

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
124:							
Kucu	25	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Gravel content	0.96
						Seepage	0.52
125:							
Wetherill	85	Not limited		Not limited		Not limited	
126:							
Wetherill	90	Not limited		Not limited		Not limited	
127:							
Wetherill	85	Not limited		Not limited		Not limited	
128:							
Wetherill	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.04	Slope	0.04	Slope	0.04
129:							
Wetherill	45	Not limited		Not limited		Not limited	
Wetoe	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.68	Slope	0.01	Large stones content	0.68
		Slope	0.01			Slope	0.01
130:							
Wetoe	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	1.00
						Seepage	0.09
Nees	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Large stones content	0.32			Gravel content	1.00
						Large stones content	0.32
Rock outcrop	15	Not rated		Very limited		Not rated	
				Slope	1.00		
				Depth to bedrock	1.00		
131:							
Yarts	85	Not limited		Not limited		Somewhat limited	
						Seepage	0.52
132:							
Yogovuci	40	Not limited		Not limited		Very limited	
						Seepage	1.00

Table 9b.--Sanitary Facilities (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
132:							
Taqoci	40	Not limited		Not limited		Somewhat limited	
						Seepage	0.22
133:							
Zigzag	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00			Slope	1.00
Sideshow	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
134:							
Zyme	85	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Slope	0.01	Depth to bedrock	1.00
		Slope	0.01			Slope	0.01
135:							
Zyme	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00			Slope	1.00
Katzine, dry	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.16			Gravel content	1.00
						Large stones content	0.16
						Seepage	0.01
136:							
Zyme	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00

Table 10a.--Construction Materials (Part 1)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
1:					
Arabrab	45	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
Longburn	40	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
2:					
Awitava	85	Fair		Fair	
		Thickest layer	0.12	Thickest layer	0.03
		Bottom layer	0.62	Bottom layer	0.03
3:					
Badland	75	Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated	
4:					
Barx	60	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
Gapmesa	30	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
5:					
Barx	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
6:					
Barx	90	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
7:					
Battlerock	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
8:					
Battlerock, saline-sodic	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
9:					
Battlerock, slightly saline-sodic	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
10:					
Bebeevar	60	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.08
Walrees	25	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
11:					
Benally	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
12:					
Blackston	55	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.06
		Bottom layer	0.00	Bottom layer	0.10
Camac	20	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
13:					
Bluechief	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
14:					
Bluechief	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
15:					
Bluechief	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
16:					
Cahona	50	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
Pulpit	35	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
17:					
Cahona	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Zigzag	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
18:					
Camac	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Kimbeto	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Badland	15	Not rated		Not rated	
19:					
Chimrock, sodic	75	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
20:					
Chimrock	75	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
21:					
Claysprings	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Badland	30	Not rated		Not rated	
22:					
Claysprings	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
23:					
Cowboy	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
24:					
Cowboy	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kava	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
25:					
Cowboy	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kava	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
26:					
Decorock	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Salamander	30	Fair		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.62	Thickest layer	0.00
27:					
Decorock	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Salamander	20	Fair		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.62	Bottom layer	0.00
Badland	10	Not rated		Not rated	
28:					
Dolcan	50	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Kucu	30	Fair		Fair	
		Thickest layer	0.12	Bottom layer	0.03
		Bottom layer	0.43	Thickest layer	0.04
29:					
Elias	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Yarts	40	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.04
		Bottom layer	0.00	Thickest layer	0.04

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
30:					
Farb	55	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.04
		Bottom layer	0.00	Bottom layer	0.04
Rock outcrop	30	Not rated		Not rated	
31:					
Farb	30	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
Rock outcrop	25	Not rated		Not rated	
Fruitland	20	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
32:					
Fardraw	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
33:					
Farview	60	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
Beclabito	20	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	10	Not rated		Not rated	
34:					
Farview	50	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
Rock outcrop	35	Not rated		Not rated	
35:					
Fluvents	55	Not rated		Not rated	
Fluvaquents	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
36:					
Gladel	45	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
36:					
Pulpit	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
37:					
Greycap	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Nomad	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
38:					
Gypsey	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
39:					
Gypsey	75	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
40:					
Herm	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
41:					
Hope	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
42:					
Hoskay	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Patel	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badland	15	Not rated		Not rated	
43:					
Ives	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.04
44:					
Jeddito	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Escavada	15	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
45:					
Jeddito	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.10
46:					
Juanalo	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
47:					
Katzine	80	Fair		Fair	
		Thickest layer	0.12	Thickest layer	0.00
		Bottom layer	0.49	Bottom layer	0.03
48:					
Lazear	50	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	30	Not rated		Not rated	
49:					
Lillings	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
50:					
Littlehat	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Persayo	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Badland	15	Not rated		Not rated	
51:					
Littlehat	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Persayo	30	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Nataani	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
52:					
Littlewater	35	Fair		Poor	
		Organic matter content	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
		Thickest layer	0.12	Organic matter content	0.00
Rubbleland	30	Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated	
53:					
Longburn	65	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
54:					
Longburn	50	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	30	Not rated		Not rated	
55:					
Mack	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
56:					
Mack	80	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
57:					
Mack	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
58:					
Mariano	75	Fair		Fair	
		Thickest layer	0.20	Bottom layer	0.03
		Bottom layer	0.20	Thickest layer	0.03
59:					
Mariano	75	Fair		Fair	
		Thickest layer	0.20	Bottom layer	0.03
		Bottom layer	0.20	Thickest layer	0.03
60:					
Mariano, Stony	80	Fair		Fair	
		Thickest layer	0.20	Thickest layer	0.03
		Bottom layer	0.20	Bottom layer	0.03

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
61:					
Mikett	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
62:					
Mikett	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
63:					
Mikim	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
64:					
Mikim	90	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
65:					
Monierco	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
66:					
Morefield	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
67:					
Morefield	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
68:					
Nataani	60	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.04
		Bottom layer	0.00	Thickest layer	0.04
Yogovuci	20	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.62	Bottom layer	0.11
69:					
Oagamati	70	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
70:					
Pagayvay	90	Fair		Fair	
		Bottom layer	0.57	Thickest layer	0.06
		Thickest layer	0.57	Bottom layer	0.06
71:					
Persayo	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
71:					
Cairn	30	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.04
		Thickest layer	0.00	Thickest layer	0.04
Patel	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
72:					
Persayo	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
73:					
Persayo	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
74:					
Persayo	50	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
Yogovuci	35	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.08
75:					
Picliff	80	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
76:					
Pogo	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
77:					
Prater	60	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
Dolcan	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
78:					
Pulpit	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
79:					
Ramper	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
80:					
Ravola	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
81:					
Ravola	85	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
82:					
Ravola	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
83:					
Redlands	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
84:					
Redlands	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
85:					
Rizno	45	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Gapmesa	35	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
86:					
Rock outcrop	95	Not rated		Not rated	
87:					
Rock outcrop	55	Not rated		Not rated	
Farview	35	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
88:					
Romberg	45	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Crosscan	40	Fair		Poor	
		Bottom layer	0.12	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00
89:					
Romberg	35	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
89:					
Crosscan	30	Fair		Poor	
		Bottom layer	0.12	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	
90:					
Roubideau	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
91:					
Sharps	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
92:					
Sharps, dry	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Gapmesa	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
93:					
Sheek	50	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
Archuleta	35	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.01
		Bottom layer	0.00	Bottom layer	0.01
94:					
Sheek	35	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
Archuleta	30	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.01
		Bottom layer	0.00	Thickest layer	0.01
Rock outcrop	20	Not rated		Not rated	
95:					
Sheek	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Archuleta	25	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.01
		Thickest layer	0.00	Thickest layer	0.01
Rock outcrop	20	Not rated		Not rated	

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
96:					
Sheppard	90	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.07
		Bottom layer	0.00	Thickest layer	0.25
97:					
Sideshow	90	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
98:					
Sideshow	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
99:					
Simpatico	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
100:					
Snapill	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
101:					
Stephouse	55	Not rated		Not rated	
Rock outcrop	25	Not rated		Not rated	
102:					
Strych	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Eagleye	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
103:					
Tocito	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Gullied land	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
104:					
Tohona	50	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
104:					
Kimnoli	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Claysprings	15	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
105:					
Torriorthents	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
106:					
Torriorthents	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badland	30	Not rated		Not rated	
107:					
Towaoc	45	Fair		Poor	
		Thickest layer	0.12	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
Kwiavu	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
108:					
Towaoc	80	Fair		Poor	
		Bottom layer	0.12	Bottom layer	0.00
		Thickest layer	0.12	Thickest layer	0.00
109:					
Tragmon	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Sheek	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
110:					
Tupuyci	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Ives	20	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.04
111:					
Typic Torriorthents-	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
111:					
Rock outcrop	25	Not rated		Not rated	
112:					
Ustic Torrifluvents	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
113:					
Ustic Torriorthents	45	Not rated		Not rated	
Gullied land	40	Not rated		Not rated	
114:					
Uzacol	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Zwicker	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Claysprings	20	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
115:					
Uzona	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
116:					
Vessilla	65	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	25	Not rated		Not rated	
117:					
Vosburg	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
118:					
Water	100	Not rated		Not rated	
119:					
Water	70	Not rated		Not rated	
Riverwash	20	Fair		Fair	
		Bottom layer	0.25	Bottom layer	0.00
		Thickest layer	0.62	Thickest layer	0.63

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
120:					
Wauquie	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
121:					
Wauquie	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Dolcan	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
122:					
Wauquie	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Dolcan	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
123:					
Wetherill	50	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Atlatl	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
124:					
Wetherill	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kucu	25	Fair		Fair	
		Thickest layer	0.12	Bottom layer	0.03
		Bottom layer	0.43	Thickest layer	0.04
125:					
Wetherill	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
126:					
Wetherill	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
127:					
Wetherill	85	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
128:					
Wetherill	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
129:					
Wetherill	45	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Wetoe	30	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
130:					
Wetoe	45	Fair		Poor	
		Thickest layer	0.12	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
Nees	20	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.43	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
131:					
Yarts	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
132:					
Yogovuci	40	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.62	Bottom layer	0.12
Taqoci	40	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
133:					
Zigzag	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Sideshow	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
134:					
Zyme	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
135:					
Zyme	45	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 10a.--Construction Materials (Part 1)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
135:					
Katzine, dry	35	Fair		Fair	
		Thickest layer	0.12	Bottom layer	0.03
		Bottom layer	0.49	Thickest layer	0.03
136:					
Zyme	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 10b.--Construction Materials (Part 2)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arabrab	45	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00			Slope	0.96
		Depth to bedrock	0.00				
		Organic matter content low	0.88				
Longburn	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Cobble content	0.93	Rock fragments	0.00
		Stone content	0.57	Stone content	0.98	Too clayey	0.70
		Organic matter content low	0.88			Slope	0.96
		Cobble content	0.92				
		Too clayey	0.98				
2:							
Awitava	85	Poor		Good		Poor	
		Carbonate content	0.00			Hard to reclaim (rock fragments)	0.00
		Droughty	0.03			Rock fragments	0.00
		Organic matter content low	0.12			Carbonate content	0.48
3:							
Badland	75	Not rated		Not rated		Not rated	
Rock outcrop	15	Not rated		Not rated		Not rated	
4:							
Barx	60	Fair		Good		Good	
		Organic matter content low	0.12				
		Carbonate content	0.80				
		Water erosion	0.90				
Gapmesa	30	Poor		Poor		Fair	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.35
		Depth to bedrock	0.35			Rock fragments	0.88
		Organic matter content low	0.88				
5:							
Barx	85	Fair		Good		Fair	
		Organic matter content low	0.12			Slope	0.96
		Carbonate content	0.80				
		Water erosion	0.90				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6:							
Barx	90	Fair		Fair		Fair	
		Carbonate content	0.46			Too clayey	0.64
		Organic matter content low	0.50				
		Water erosion	0.90				
		Too clayey	0.98				
7:							
Battlerock	85	Fair		Fair		Good	
		Organic matter content low	0.88	Shrink-swell	0.87		
8:							
Battlerock, saline-sodic	70	Poor		Good		Poor	
		Sodium content	0.00			Salinity	0.00
		Too alkaline	0.00			Sodium content	0.22
		Organic matter content low	0.88				
		Water erosion	0.90				
9:							
Battlerock, slightly saline-sodic	70	Fair		Good		Fair	
		Sodium content	0.60			Sodium content	0.60
		Organic matter content low	0.88				
		Water erosion	0.99				
10:							
Bebeevar	60	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.03
		Organic matter content low	0.24			Hard to reclaim (rock fragments)	0.95
		Droughty	0.38				
Walrees	25	Fair		Fair		Fair	
		Organic matter content low	0.24	Wetness depth	0.98	Salinity	0.50
		Droughty	0.53			Hard to reclaim (rock fragments)	0.82
						Wetness depth	0.98
11:							
Benally	80	Poor		Fair		Poor	
		Salinity	0.00	Shrink-swell	0.91	Salinity	0.00
		Sodium content	0.00			Sodium content	0.00
		Too alkaline	0.00			Too clayey	0.58
		Organic matter content low	0.18				
		Droughty	0.33				
		Too clayey	0.98				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
12:							
Blackston	55	Fair		Good		Poor	
		Droughty	0.03			Rock fragments	0.00
		Organic matter content low	0.18			Hard to reclaim (rock fragments)	0.00
		Sodium content	0.40				
Camac	20	Fair		Poor		Poor	
		Droughty	0.13	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.18	Slope	0.00	Sodium content	0.40
		Sodium content	0.40	Shrink-swell	0.99	Salinity	0.50
		Depth to bedrock	0.65			Depth to bedrock	0.65
Rock outcrop	15	Not rated		Not rated		Not rated	
13:							
Bluechief	80	Fair		Poor		Fair	
		Droughty	0.08	Depth to bedrock	0.00	Depth to bedrock	0.46
		Carbonate content	0.46				
		Depth to bedrock	0.46				
		Organic matter content low	0.92				
14:							
Bluechief	80	Fair		Poor		Fair	
		Droughty	0.08	Depth to bedrock	0.00	Depth to bedrock	0.46
		Carbonate content	0.46				
		Depth to bedrock	0.46				
		Organic matter content low	0.92				
15:							
Bluechief	75	Fair		Poor		Fair	
		Droughty	0.08	Depth to bedrock	0.00	Depth to bedrock	0.46
		Carbonate content	0.46				
		Depth to bedrock	0.46				
		Organic matter content low	0.92				
Rock outcrop	15	Not rated		Not rated		Not rated	
16:							
Cahona	50	Fair		Fair		Good	
		Carbonate content	0.16	Shrink-swell	0.98		
		Organic matter content low	0.88				
		Water erosion	0.99				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
16:							
Pulpit	35	Fair		Poor		Fair	
		Depth to bedrock	0.10	Depth to bedrock	0.00	Depth to bedrock	0.10
		Organic matter content low	0.12				
		Droughty	0.41				
		Water erosion	0.99				
17:							
Cahona	35	Fair		Good		Poor	
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.00
		Carbonate content	0.80			Rock fragments	0.88
						Slope	0.96
Zigzag	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.50	Shrink-swell	0.87	Too clayey	0.54
		Too clayey	0.82				
		Sodium content	0.97				
18:							
Camac	35	Fair		Poor		Poor	
		Organic matter content low	0.18	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.32	Slope	0.00	Sodium content	0.40
		Sodium content	0.40	Shrink-swell	0.97	Salinity	0.50
		Depth to bedrock	0.84			Depth to bedrock	0.84
Kimbeto	35	Poor		Good		Poor	
		Sodium content	0.00			Sodium content	0.00
		Organic matter content low	0.40			Salinity	0.00
		Salinity	0.50			Hard to reclaim (rock fragments)	0.02
		Carbonate content	0.92			Rock fragments	0.72
		Droughty	0.98			Carbonate content	0.99
		Water erosion	0.99				
Badland	15	Not rated		Not rated		Not rated	
19:							
Chimrock, sodic	75	Poor		Fair		Poor	
		Sodium content	0.00	Shrink-swell	0.87	Sodium content	0.00
		Too alkaline	0.00			Salinity	0.00
		Organic matter content low	0.88			Carbonate content	0.98
		Carbonate content	0.92				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
20:							
Chimrock	75	Fair		Good		Good	
		Salinity	0.50				
		Organic matter content low	0.88				
		Water erosion	0.99				
21:							
Claysprings	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Depth to bedrock	0.00	Slope	0.00	Sodium content	0.00
		Sodium content	0.00	Shrink-swell	0.12	Depth to bedrock	0.00
		Too alkaline	0.00			Salinity	0.00
		Too clayey	0.00			Slope	0.00
		Organic matter content low	0.24				
		Salinity	0.88				
		Stone content	0.99				
Badland	30	Not rated		Not rated		Not rated	
22:							
Claysprings	80	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00	Slope	0.00	Too clayey	0.00
		Too clayey	0.00	Shrink-swell	0.12	Slope	0.00
		Organic matter content low	0.12	Stone content	0.98	Sodium content	0.22
		Sodium content	0.22				
		Stone content	0.67				
23:							
Cowboy	85	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.12	Too clayey	0.00
		Organic matter content low	0.18			Salinity	0.50
24:							
Cowboy	50	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.12	Too clayey	0.00
		Sodium content	0.00			Sodium content	0.00
		Organic matter content low	0.12			Salinity	0.50
Kava	30	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.00	Shrink-swell	0.12	Depth to bedrock	0.00
		Depth to bedrock	0.00			Salinity	0.50
		Organic matter content low	0.12			Sodium content	0.98
		Sodium content	0.97				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
25:							
Cowboy	50	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.12	Too clayey	0.00
		Sodium content	0.00			Sodium content	0.00
		Organic matter content low	0.12			Salinity	0.50
Kava	30	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.00	Shrink-swell	0.12	Depth to bedrock	0.00
		Depth to bedrock	0.00			Salinity	0.50
		Organic matter content low	0.12			Sodium content	0.98
		Sodium content	0.97				
26:							
Decorock	55	Fair		Poor		Poor	
		Too clayey	0.08	Slope	0.00	Slope	0.00
		Droughty	0.54	Cobble content	0.48	Hard to reclaim (rock fragments)	0.00
		Cobble content	0.86	Depth to bedrock	0.99	Rock fragments	0.00
		Organic matter content low	0.88			Too clayey	0.06
						Salinity	0.50
Salamander	30	Fair		Good		Poor	
		Organic matter content low	0.12			Rock fragments	0.00
		Carbonate content	0.32			Hard to reclaim (rock fragments)	0.68
		Droughty	0.96			Carbonate content	0.84
27:							
Decorock	60	Fair		Poor		Poor	
		Too clayey	0.08	Slope	0.00	Slope	0.00
		Droughty	0.54	Cobble content	0.48	Hard to reclaim (rock fragments)	0.00
		Cobble content	0.86	Depth to bedrock	0.99	Rock fragments	0.00
		Organic matter content low	0.88			Too clayey	0.06
						Salinity	0.50
Salamander	20	Fair		Good		Poor	
		Organic matter content low	0.12			Rock fragments	0.00
		Carbonate content	0.32			Hard to reclaim (rock fragments)	0.68
		Droughty	0.96			Carbonate content	0.84
Badland	10	Not rated		Not rated		Not rated	

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
28:							
Dolcan	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.92	Slope	0.00
		Organic matter content low	0.50			Rock fragments	0.24
Kucu	30	Poor		Good		Poor	
		Carbonate content	0.00			Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.50			Rock fragments	0.00
		Droughty	0.94			Carbonate content	0.30
29:							
Elias	50	Poor		Fair		Poor	
		Too alkaline	0.00	Shrink-swell	0.87	Sodium content	0.00
		Sodium content	0.00			Salinity	0.12
		Organic matter content low	0.18				
		Water erosion	0.99				
Yarts	40	Fair		Good		Good	
		Organic matter content low	0.88				
30:							
Farb	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00				
		Organic matter content low	0.12				
Rock outcrop	30	Not rated		Not rated		Not rated	
31:							
Farb	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.00
Rock outcrop	25	Not rated		Not rated		Not rated	
Fruitland	20	Fair		Good		Good	
		Organic matter content low	0.12				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
32:							
Fardraw	85	Fair		Poor		Poor	
		Cobble content	0.01	Cobble content	0.00	Rock fragments	0.00
		Too clayey	0.50	Stone content	0.82	Hard to reclaim (rock fragments)	0.00
		Stone content	0.82	Shrink-swell	0.90	Too clayey	0.36
		Organic matter content low	0.88				
33:							
Farview	60	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00			Rock fragments	0.28
		Organic matter content low	0.88				
		Carbonate content	0.97				
Beclabito	20	Poor		Fair		Poor	
		Sodium content	0.00	Depth to bedrock	0.95	Sodium content	0.00
		Too alkaline	0.00			Salinity	0.50
		Organic matter content low	0.24			Rock fragments	0.97
		Salinity	0.50			Carbonate content	0.99
		Carbonate content	0.80				
		Droughty	0.95				
Rock outcrop	10	Not rated		Not rated		Not rated	
34:							
Farview	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.28
		Organic matter content low	0.88			Carbonate content	0.99
		Carbonate content	0.97				
Rock outcrop	35	Not rated		Not rated		Not rated	
35:							
Fluvents	55	Not rated		Good		Not rated	
Fluvaquents	30	Fair		Fair		Poor	
		Organic matter content low	0.12	Wetness depth	0.53	Rock fragments	0.00
		Droughty	0.60			Hard to reclaim (rock fragments)	0.00
						Wetness depth	0.53

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
36:							
Gladel	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.88
		Organic matter content low	0.12				
Pulpit	35	Fair		Poor		Fair	
		Depth to bedrock	0.10	Depth to bedrock	0.00	Depth to bedrock	0.10
		Organic matter content low	0.12				
		Droughty	0.41				
		Water erosion	0.99				
37:							
Greycap	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Carbonate content	0.00
		Carbonate content	0.00			Depth to bedrock	0.00
		Depth to bedrock	0.00			Too clayey	0.72
		Organic matter content low	0.92				
		Too clayey	0.98				
Nomad	40	Poor		Poor		Poor	
		Carbonate content	0.00	Depth to bedrock	0.00	Carbonate content	0.00
		Droughty	0.38			Depth to bedrock	0.54
		Depth to bedrock	0.54				
		Organic matter content low	0.92				
		Water erosion	0.99				
38:							
Gypsey	80	Fair		Poor		Fair	
		Organic matter content low	0.18	Depth to bedrock	0.00	Depth to bedrock	0.35
		Depth to bedrock	0.35			Salinity	0.88
		Droughty	0.68			Carbonate content	0.93
		Carbonate content	0.68				
		Water erosion	0.90				
39:							
Gypsey	75	Fair		Poor		Fair	
		Organic matter content low	0.18	Depth to bedrock	0.00	Depth to bedrock	0.35
		Depth to bedrock	0.35			Salinity	0.88
		Droughty	0.68			Carbonate content	0.93
		Carbonate content	0.68			Slope	0.96
		Water erosion	0.90				
40:							
Herm	90	Fair		Fair		Poor	
		Too clayey	0.02	Shrink-swell	0.18	Slope	0.00
		Organic matter content low	0.82			Too clayey	0.01

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
41:							
Hope	75	Fair		Fair		Fair	
		Organic matter content low	0.12	Shrink-swell	0.87	Carbonate content	0.99
		Carbonate content	0.32				
		Water erosion	0.99				
42:							
Hoskay	40	Poor		Fair		Poor	
		Sodium content	0.00	Shrink-swell	0.29	Too clayey	0.00
		Too alkaline	0.00			Sodium content	0.00
		Too clayey	0.00			Salinity	0.00
		Organic matter content low	0.24				
		Salinity	0.50				
		Droughty	0.98				
Patel	30	Poor		Poor		Poor	
		Sodium content	0.00	Depth to bedrock	0.00	Sodium content	0.00
		Too alkaline	0.00	Shrink-swell	0.87	Salinity	0.00
		Organic matter content low	0.18			Slope	0.00
		Droughty	0.21			Too clayey	0.45
		Salinity	0.50			Depth to bedrock	0.79
		Too clayey	0.76				
		Depth to bedrock	0.79				
		Water erosion	0.99				
Badland	15	Not rated		Not rated		Not rated	
43:							
Ives	85	Poor		Good		Fair	
		Too alkaline	0.00			Too sandy	0.78
		Organic matter content low	0.12				
		Too sandy	0.78				
44:							
Jeddito	70	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Salinity	0.50
		Organic matter content low	0.12				
		Droughty	0.99				
Escavada	15	Fair		Good		Fair	
		Too sandy	0.01			Too sandy	0.01
		Organic matter content low	0.32			Salinity	0.50
		Water erosion	0.37				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
45:							
Jeddito	85	Poor		Good		Fair	
		Wind erosion	0.00			Sodium content	0.40
		Organic matter content low	0.32				
		Sodium content	0.40				
46:							
Juanalo	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Carbonate content	0.66
		Carbonate content	0.00				
		Organic matter content low	0.18				
47:							
Katzine	80	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Droughty	0.32	Stone content	0.00	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.88	Cobble content	0.98	Rock fragments	0.00
		Carbonate content	0.92				
48:							
Lazear	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Stone content	0.00	Stone content	0.01	Rock fragments	0.00
		Organic matter content low	0.12				
Rock outcrop	30	Not rated		Not rated		Not rated	
49:							
Lillings	90	Poor		Good		Poor	
		Too alkaline	0.00			Salinity	0.00
		Organic matter content low	0.12			Sodium content	0.60
		Sodium content	0.60				
		Salinity	0.88				
		Water erosion	0.90				
50:							
Littlehat	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Salinity	0.00
		Salinity	0.00	Slope	0.02	Slope	0.00
		Sodium content	0.00	Shrink-swell	0.87	Sodium content	0.00
		Organic matter content low	0.18			Depth to bedrock	0.93
		Water erosion	0.90				
		Depth to bedrock	0.93				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
50:							
Persayo	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Shrink-swell	0.87	Salinity	0.00
		Organic matter content low	0.18			Sodium content	0.40
		Sodium content	0.40			Too clayey	0.58
		Salinity	0.88			Slope	0.96
		Water erosion	0.90				
		Too clayey	0.98				
Badland	15	Not rated		Not rated		Not rated	
51:							
Littlehat	35	Poor		Poor		Poor	
		Sodium content	0.00	Depth to bedrock	0.00	Salinity	0.00
		Droughty	0.00	Shrink-swell	0.87	Sodium content	0.00
		Salinity	0.00			Depth to bedrock	0.65
		Organic matter content low	0.18				
		Depth to bedrock	0.65				
		Water erosion	0.90				
Persayo	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Shrink-swell	0.87	Salinity	0.00
		Organic matter content low	0.18			Sodium content	0.40
		Water erosion	0.37			Too clayey	0.58
		Sodium content	0.40				
		Salinity	0.88				
		Too clayey	0.98				
Nataani	20	Fair		Poor		Poor	
		Droughty	0.19	Depth to bedrock	0.00	Salinity	0.00
		Water erosion	0.37			Depth to bedrock	0.54
		Salinity	0.50			Sodium content	0.78
		Organic matter content low	0.50				
		Depth to bedrock	0.54				
		Sodium content	0.78				
52:							
Littlewater	35	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Too acid	0.74	Stone content	0.00	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.88			Rock fragments	0.00
Rubbleland	30	Not rated		Poor		Not rated	
				Slope	0.00		
				Stone content	0.00		
				Cobble content	0.50		

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
52:							
Rock outcrop--------	15	Not rated		Not rated		Not rated	
53:							
Longburn----------	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.57	Cobble content	0.93	Slope	0.00
		Organic matter content low	0.88	Stone content	0.98	Too clayey	0.70
		Cobble content	0.92				
		Too clayey	0.98				
Rock outcrop--------	20	Not rated		Not rated		Not rated	
54:							
Longburn----------	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.57	Cobble content	0.93	Rock fragments	0.00
		Organic matter content low	0.88	Stone content	0.98	Too clayey	0.70
		Cobble content	0.92				
		Too clayey	0.98				
Rock outcrop--------	30	Not rated		Not rated		Not rated	
55:							
Mack----------	85	Fair		Good		Good	
		Organic matter content low	0.12				
		Carbonate content	0.92				
56:							
Mack----------	80	Poor		Good		Fair	
		Too alkaline	0.00			Carbonate content	0.99
		Carbonate content	0.46				
		Organic matter content low	0.92				
		Water erosion	0.99				
57:							
Mack----------	80	Poor		Good		Fair	
		Too alkaline	0.00			Carbonate content	0.99
		Carbonate content	0.46				
		Organic matter content low	0.92				
		Water erosion	0.99				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
58:							
Mariano	75	Poor		Fair		Poor	
		Carbonate content	0.00			Hard to reclaim (rock fragments)	0.00
		Salinity	0.50			Rock fragments	0.00
		Droughty	0.56			Carbonate content	0.40
		Organic matter content low	0.92				
59:							
Mariano	75	Poor		Fair		Poor	
		Carbonate content	0.00			Hard to reclaim (rock fragments)	0.00
		Salinity	0.50			Rock fragments	0.00
		Droughty	0.56			Carbonate content	0.40
		Organic matter content low	0.92				
60:							
Mariano, Stony	80	Poor		Fair		Poor	
		Carbonate content	0.00	Cobble content	0.98	Hard to reclaim (rock fragments)	0.00
		Droughty	0.42			Rock fragments	0.00
		Salinity	0.50			Carbonate content	0.34
		Organic matter content low	0.92				
61:							
Mikett	85	Poor		Fair		Poor	
		Sodium content	0.00	Wetness depth	0.53	Sodium content	0.00
		Too alkaline	0.00			Salinity	0.00
		Salinity	0.50			Wetness depth	0.53
		Organic matter content low	0.88				
62:							
Mikett	85	Poor		Good		Fair	
		Too alkaline	0.00			Sodium content	0.22
		Organic matter content low	0.12			Salinity	0.50
		Sodium content	0.22			Too clayey	0.57
		Too clayey	0.98				
63:							
Mikim	90	Fair		Good		Good	
		Organic matter content low	0.82				
64:							
Mikim	90	Fair		Good		Good	
		Organic matter content low	0.12				
		Water erosion	0.99				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
65:							
Monierco	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too alkaline	0.00			Depth to bedrock	0.00
		Depth to bedrock	0.00				
		Organic matter content low	0.18				
66:							
Morefield	90	Fair		Fair		Good	
		Organic matter content low	0.12	Shrink-swell	0.87		
67:							
Morefield	90	Fair		Fair		Good	
		Organic matter content low	0.12	Shrink-swell	0.87		
68:							
Nataani	60	Fair		Poor		Fair	
		Droughty	0.76	Depth to bedrock	0.00	Salinity	0.88
		Organic matter content low	0.92			Depth to bedrock	0.99
		Depth to bedrock	0.99				
Yogovuci	20	Fair		Fair		Fair	
		Organic matter content low	0.12	Shrink-swell	0.87	Salinity	0.50
69:							
Oagamati	70	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Sodium content	0.00	Shrink-swell	0.12	Sodium content	0.00
		Too alkaline	0.00			Salinity	0.00
		Salinity	0.50			Depth to bedrock	0.90
		Depth to bedrock	0.90				
		Droughty	0.92				
		Organic matter content low	0.92				
70:							
Pagayvay	90	Poor		Poor		Poor	
		Droughty	0.00	Stone content	0.00	Rock fragments	0.00
		Stone content	0.00			Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.02				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
71:							
Persayo	35	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00	Shrink-swell	0.87	Salinity	0.00
		Organic matter content low	0.18			Sodium content	0.40
		Sodium content	0.40			Too clayey	0.58
		Salinity	0.88				
		Too clayey	0.98				
		Water erosion	0.99				
Cairn	30	Poor		Fair		Poor	
		Carbonate content	0.00	Depth to bedrock	0.23	Hard to reclaim (rock fragments)	0.00
		Droughty	0.03	Cobble content	0.36	Rock fragments	0.00
		Organic matter content low	0.18			Carbonate content	0.06
		Sodium content	0.40			Salinity	0.88
		Cobble content	0.98				
		Water erosion	0.99				
Patel	25	Poor		Poor		Poor	
		Sodium content	0.00	Depth to bedrock	0.00	Salinity	0.00
		Too alkaline	0.00	Shrink-swell	0.87	Slope	0.00
		Too clayey	0.02			Sodium content	0.00
		Droughty	0.29			Too clayey	0.01
		Organic matter content low	0.32			Depth to bedrock	0.97
		Salinity	0.50				
		Depth to bedrock	0.97				
		Carbonate content	0.97				
		Water erosion	0.99				
72:							
Persayo	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.18	Shrink-swell	0.87	Too clayey	0.58
		Carbonate content	0.92			Carbonate content	0.92
		Too clayey	0.98				
		Water erosion	0.99				
73:							
Persayo	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Shrink-swell	0.87	Too clayey	0.58
		Organic matter content low	0.18			Carbonate content	0.80
		Carbonate content	0.80				
		Too clayey	0.98				
		Water erosion	0.99				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
74:							
Persayo	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Shrink-swell	0.87	Slope	0.37
		Organic matter content low	0.12			Carbonate content	0.92
		Carbonate content	0.92				
		Water erosion	0.99				
Yogovuci	35	Fair		Good		Poor	
		Salinity	0.50			Salinity	0.00
		Organic matter content low	0.88				
75:							
Picliff	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00			Depth to bedrock	0.00
		Organic matter content low	0.18				
		Water erosion	0.99				
76:							
Pogo	90	Good		Poor		Poor	
				Wetness depth	0.00	Wetness depth	0.00
77:							
Prater	60	Poor		Poor		Poor	
		Wind erosion	0.00	Slope	0.00	Slope	0.00
		Too clayey	0.00	Shrink-swell	0.87	Too clayey	0.00
		Organic matter content low	0.88			Hard to reclaim (rock fragments)	0.88
						Rock fragments	0.88
Dolcan	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Organic matter content low	0.50			Rock fragments	0.24
		Stone content	0.94			Too clayey	0.62
		Too clayey	0.95				
78:							
Pulpit	80	Fair		Poor		Fair	
		Organic matter content low	0.12	Depth to bedrock	0.00	Depth to bedrock	0.90
		Depth to bedrock	0.90				
		Water erosion	0.99				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
79:							
Ramper	90	Fair		Good		Fair	
		Organic matter content low	0.88			Salinity	0.88
		Water erosion	0.99				
80:							
Ravola	85	Poor		Good		Fair	
		Sodium content	0.00			Sodium content	0.22
		Too alkaline	0.00			Salinity	0.50
		Organic matter content low	0.12				
		Salinity	0.50				
81:							
Ravola	85	Fair		Fair		Good	
		Organic matter content low	0.92	Shrink-swell	0.87		
		Water erosion	0.99				
82:							
Ravola	80	Fair		Good		Good	
		Organic matter content low	0.32				
		Water erosion	0.37				
83:							
Redlands	85	Poor		Good		Good	
		Organic matter content low	0.00				
		Water erosion	0.99				
84:							
Redlands	85	Poor		Good		Good	
		Organic matter content low	0.00				
		Water erosion	0.99				
85:							
Rizno	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00				
		Organic matter content low	0.88				
		Water erosion	0.90				
Gapmesa	35	Poor		Poor		Fair	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.35
		Depth to bedrock	0.35			Rock fragments	0.88
		Organic matter content low	0.88				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
86:							
Rock outcrop--------	95	Not rated		Not rated		Not rated	
87:							
Rock outcrop--------	55	Not rated		Not rated		Not rated	
Farview-------------	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
		Organic matter content low	0.88			Slope	0.00
88:							
Romberg-------------	45	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.12	Cobble content	0.00	Rock fragments	0.00
		Cobble content	0.51	Slope	0.98	Slope	0.00
		Droughty	0.71				
Crosscan------------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Stone content	0.98	Depth to bedrock	0.00
		Organic matter content low	0.12	Slope	0.98	Slope	0.00
		Stone content	0.62				
89:							
Romberg-------------	35	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Stone content	0.00	Hard to reclaim (rock fragments)	0.00
		Cobble content	0.51	Cobble content	0.00	Rock fragments	0.00
		Droughty	0.71				
Crosscan------------	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12	Stone content	0.98	Depth to bedrock	0.00
		Stone content	0.62				
Rock outcrop--------	20	Not rated		Not rated		Not rated	
90:							
Roubideau-----------	80	Fair		Poor		Fair	
		Organic matter content low	0.88	Depth to bedrock	0.00	Rock fragments	0.88
		Depth to bedrock	0.99	Shrink-swell	0.91	Depth to bedrock	0.99
		Water erosion	0.99				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
91:							
Sharps	80	Fair		Poor		Fair	
		Droughty	0.66	Depth to bedrock	0.00	Depth to bedrock	0.71
		Depth to bedrock	0.71			Slope	0.96
		Organic matter content low	0.82				
		Water erosion	0.99				
92:							
Sharps, dry	45	Fair		Poor		Fair	
		Droughty	0.66	Depth to bedrock	0.00	Depth to bedrock	0.71
		Depth to bedrock	0.71			Slope	0.96
		Organic matter content low	0.82				
		Water erosion	0.99				
Gapmesa	40	Poor		Poor		Fair	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.35
		Depth to bedrock	0.35			Rock fragments	0.88
		Organic matter content low	0.88			Slope	0.96
93:							
Sheek	50	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Rock fragments	0.00
		Cobble content	0.42	Cobble content	0.00	Hard to reclaim (rock fragments)	0.00
		Too acid	0.74	Slope	0.98	Slope	0.00
		Too clayey	0.98			Too clayey	0.86
Archuleta	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Stone content	0.00	Slope	0.00
		Stone content	0.00	Slope	0.98	Rock fragments	0.28
		Too acid	0.74				
		Organic matter content low	0.88				
94:							
Sheek	35	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Cobble content	0.42	Stone content	0.00	Rock fragments	0.00
		Too acid	0.74	Cobble content	0.00	Hard to reclaim (rock fragments)	0.00
		Too clayey	0.98			Too clayey	0.86
Archuleta	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.00	Stone content	0.00	Rock fragments	0.28
		Too acid	0.74				
		Organic matter content low	0.88				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
94:							
Rock outcrop--------	20	Not rated		Not rated		Not rated	
95:							
Sheek----------	40	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Cobble content	0.42	Stone content	0.00	Rock fragments	0.00
		Too acid	0.74	Cobble content	0.00	Hard to reclaim (rock fragments)	0.00
		Too clayey	0.98			Too clayey	0.86
Archuleta----------	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.00	Stone content	0.00	Rock fragments	0.28
		Too acid	0.74				
		Organic matter content low	0.88				
Rock outcrop--------	20	Not rated		Not rated		Not rated	
96:							
Sheppard----------	90	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.41
		Organic matter content low	0.12				
		Droughty	0.31				
		Too sandy	0.41				
97:							
Sideshow----------	90	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.12	Too clayey	0.00
		Organic matter content low	0.12				
98:							
Sideshow----------	90	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.12	Too clayey	0.00
		Organic matter content low	0.12				
99:							
Simpatico----------	70	Fair		Good		Poor	
		Too clayey	0.98			Hard to reclaim (rock fragments)	0.00
						Too clayey	0.93
100:							
Snapill----------	85	Poor		Fair		Poor	
		Sodium content	0.00	Depth to bedrock	0.82	Sodium content	0.00
		Water erosion	0.37			Carbonate content	0.94
		Carbonate content	0.68				
		Organic matter content low	0.68				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
101:							
Stephouse	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
		Organic matter content low	0.12			Carbonate content	0.71
		Carbonate content	0.68				
Rock outcrop	25	Not rated		Not rated		Not rated	
102:							
Strych	50	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Rock fragments	0.00
		Organic matter content low	0.32	Slope	0.00	Slope	0.00
		Sodium content	0.40	Cobble content	0.49	Hard to reclaim (rock fragments)	0.12
		Droughty	0.81			Sodium content	0.40
Eagleye	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Too clayey	0.00
		Too clayey	0.00	Shrink-swell	0.12	Salinity	0.00
		Organic matter content low	0.18			Depth to bedrock	0.00
		Sodium content	0.40			Sodium content	0.40
		Salinity	0.88				
		Water erosion	0.99				
Rock outcrop	15	Not rated		Not rated		Not rated	
103:							
Tocito	55	Fair		Good		Fair	
		Organic matter content low	0.24			Salinity	0.50
		Water erosion	0.37				
Gullied land	30	Not rated		Poor		Not rated	
				Slope	0.00		
104:							
Tohona	50	Poor		Poor		Poor	
		Sodium content	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Too alkaline	0.00	Shrink-swell	0.12	Salinity	0.00
		Too clayey	0.00			Sodium content	0.40
		Droughty	0.04			Depth to bedrock	0.79
		Organic matter content low	0.24			Rock fragments	0.97
		Salinity	0.50				
		Depth to bedrock	0.79				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
104:							
Kimnoli	20	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00			Rock fragments	0.97
		Depth to bedrock	0.00				
		Organic matter content low	0.24				
Claysprings	15	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Too clayey	0.00
		Sodium content	0.00	Shrink-swell	0.12	Sodium content	0.00
		Too alkaline	0.00			Depth to bedrock	0.00
		Droughty	0.00			Salinity	0.00
		Organic matter content low	0.24				
		Salinity	0.88				
105:							
Torriorthents	90	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Stone content	0.00	Slope	0.00
		Stone content	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12	Cobble content	0.79	Too clayey	0.57
		Cobble content	0.59			Sodium content	0.98
		Sodium content	0.97				
		Too clayey	0.98				
106:							
Torriorthents	55	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Shrink-swell	0.12	Too clayey	0.29
		Too clayey	0.50				
Badland	30	Not rated		Not rated		Not rated	
107:							
Towaoc	45	Fair		Poor		Poor	
		Droughty	0.74	Slope	0.00	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.88			Rock fragments	0.00
						Slope	0.00
Kwiavu	40	Fair		Fair		Poor	
		Stone content	0.64	Slope	0.50	Slope	0.00
		Organic matter content low	0.88	Stone content	0.71	Hard to reclaim (rock fragments)	0.88
		Too acid	0.99			Rock fragments	0.88

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
108:							
Towaoc	80	Fair		Poor		Poor	
		Droughty	0.74	Slope	0.00	Slope	0.00
		Organic matter content low	0.88			Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
109:							
Tragmon	50	Good		Fair		Poor	
				Slope	0.98	Slope	0.00
						Rock fragments	0.95
						Hard to reclaim (rock fragments)	0.95
Sheek	35	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Hard to reclaim (rock fragments)	0.00
		Cobble content	0.67	Cobble content	0.00	Rock fragments	0.00
		Too clayey	0.98	Slope	0.68	Slope	0.00
						Too clayey	0.86
110:							
Tupuyci	60	Poor		Poor		Poor	
		Droughty	0.00	Cobble content	0.00	Hard to reclaim (rock fragments)	0.00
		Cobble content	0.01			Rock fragments	0.00
		Too sandy	0.44			Too sandy	0.44
		Organic matter content low	0.50				
Ives	20	Poor		Good		Fair	
		Too alkaline	0.00			Too sandy	0.44
		Organic matter content low	0.12				
		Too sandy	0.44				
111:							
Typic Torriorthents-	60	Poor		Poor		Poor	
		Stone content	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00	Stone content	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.12	Cobble content	0.79	Sodium content	0.98
		Cobble content	0.71				
		Sodium content	0.97				
Rock outcrop	25	Not rated		Not rated		Not rated	

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
112:							
Ustic Torrifluvents-	80	Poor		Good		Poor	
		Wind erosion	0.00			Rock fragments	0.00
		Organic matter content low	0.12			Hard to reclaim (rock fragments)	0.68
		Droughty	0.37			Too sandy	0.78
		Too sandy	0.78			Salinity	0.88
113:							
Ustic Torriorthents-	45	Not rated		Fair		Not rated	
				Shrink-swell	0.87		
Gullied land--------	40	Not rated		Not rated		Not rated	
114:							
Uzacol--------------	35	Poor		Fair		Poor	
		Sodium content	0.00	Shrink-swell	0.12	Sodium content	0.00
		Too alkaline	0.00			Too clayey	0.00
		Too clayey	0.00			Salinity	0.00
		Organic matter content low	0.12				
		Salinity	0.88				
Zwicker-------------	30	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.12	Depth to bedrock	0.71
		Depth to bedrock	0.71				
		Droughty	0.95				
Claysprings---------	20	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.00	Shrink-swell	0.12	Depth to bedrock	0.00
		Too clayey	0.00	Stone content	0.98	Sodium content	0.22
		Organic matter content low	0.12				
		Sodium content	0.22				
		Stone content	0.67				
115:							
Uzona---------------	75	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.12	Too clayey	0.00
		Sodium content	0.00			Sodium content	0.00
		Salinity	0.00				
		Too alkaline	0.00				
		Organic matter content low	0.18				
		Water erosion	0.68				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
116:							
Vessilla	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Slope	0.00
		Organic matter content low	0.88			Rock fragments	0.72
Rock outcrop	25	Not rated		Not rated		Not rated	
117:							
Vosburg	85	Good		Good		Good	
118:							
Water	100	Not rated		Not rated		Not rated	
119:							
Water	70	Not rated		Not rated		Not rated	
Riverwash	20	Not rated		Poor		Not rated	
				Wetness depth	0.00		
120:							
Wauquie	85	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Slope	0.00
		Organic matter content low	0.12	Cobble content	0.50	Rock fragments	0.00
		Droughty	0.61	Slope	0.98	Hard to reclaim (rock fragments)	0.02
121:							
Wauquie	45	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Slope	0.00
		Organic matter content low	0.50	Cobble content	0.40	Rock fragments	0.00
		Droughty	0.89	Slope	0.98	Hard to reclaim (rock fragments)	0.02
Dolcan	40	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.98	Depth to bedrock	0.00
		Organic matter content low	0.50			Rock fragments	0.24
		Stone content	0.94			Too clayey	0.62
		Too clayey	0.95				
122:							
Wauquie	40	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Slope	0.00
		Organic matter content low	0.50	Slope	0.00	Rock fragments	0.00
		Droughty	0.89	Cobble content	0.40	Hard to reclaim (rock fragments)	0.02

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
122:							
Dolcan	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Organic matter content low	0.50			Rock fragments	0.24
		Stone content	0.94			Too clayey	0.62
		Too clayey	0.95				
Rock outcrop	15	Not rated		Not rated		Not rated	
123:							
Wetherill	50	Fair		Good		Good	
		Organic matter content low	0.32				
		Water erosion	0.37				
		Carbonate content	0.97				
Atlatl	35	Poor		Poor		Poor	
		Carbonate content	0.00	Depth to bedrock	0.00	Carbonate content	0.00
		Droughty	0.50			Depth to bedrock	0.54
		Depth to bedrock	0.54				
124:							
Wetherill	60	Fair		Good		Good	
		Organic matter content low	0.88				
		Water erosion	0.90				
		Carbonate content	0.92				
Kucu	25	Poor		Good		Poor	
		Carbonate content	0.00			Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.50			Rock fragments	0.00
		Droughty	0.94			Carbonate content	0.30
125:							
Wetherill	85	Fair		Fair		Good	
		Organic matter content low	0.88	Shrink-swell	0.96		
		Carbonate content	0.97				
		Water erosion	0.99				
126:							
Wetherill	90	Fair		Fair		Good	
		Organic matter content low	0.88	Shrink-swell	0.87		
		Water erosion	0.90				
		Carbonate content	0.92				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
127:							
Wetherill	85	Fair		Fair		Good	
		Organic matter content low	0.88	Shrink-swell	0.87		
		Water erosion	0.90				
		Carbonate content	0.92				
128:							
Wetherill	80	Fair		Fair		Fair	
		Organic matter content low	0.88	Shrink-swell	0.87	Slope	0.96
		Water erosion	0.90				
		Carbonate content	0.92				
129:							
Wetherill	45	Fair		Good		Good	
		Organic matter content low	0.88				
		Water erosion	0.90				
		Carbonate content	0.92				
Wetoe	30	Fair		Poor		Poor	
		Cobble content	0.68	Cobble content	0.00	Hard to reclaim (rock fragments)	0.00
		Droughty	0.72			Rock fragments	0.00
		Organic matter content low	0.86				
130:							
Wetoe	45	Fair		Poor		Poor	
		Droughty	0.03	Slope	0.00	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.88			Rock fragments	0.00
						Slope	0.00
Nees	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.00	Stone content	0.31	Slope	0.00
		Organic matter content low	0.88				
Rock outcrop	15	Not rated		Not rated		Not rated	
131:							
Yarts	85	Fair		Good		Good	
		Organic matter content low	0.88				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
132:							
Yogovuci	40	Fair		Fair		Fair	
		Organic matter content low	0.12	Shrink-swell	0.87	Salinity	0.50
Taqoci	40	Poor		Good		Poor	
		Sodium content	0.00			Sodium content	0.00
		Too alkaline	0.00			Hard to reclaim (rock fragments)	0.32
		Organic matter content low	0.12				
		Salinity	0.50				
		Carbonate content	0.92				
		Water erosion	0.99				
133:							
Zigzag	60	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.01	Shrink-swell	0.12	Slope	0.00
		Organic matter content low	0.08				
Sideshow	30	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.12	Slope	0.00
134:							
Zyme	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Shrink-swell	0.87	Too clayey	0.06
		Too clayey	0.08				
		Organic matter content low	0.88				
135:							
Zyme	45	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Depth to bedrock	0.00
		Too clayey	0.02	Shrink-swell	0.87	Too clayey	0.01
		Organic matter content low	0.88				
		Sodium content	0.97				

Table 10b.--Construction Materials (Part 2)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
135:							
Katzine, dry--------	35	Poor		Fair		Poor	
		Stone content	0.00	Stone content	0.01	Slope	0.00
		Droughty	0.38	Slope	0.50	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.88	Cobble content	0.98	Rock fragments	0.00
		Carbonate content	0.92				
136:							
Zyme----------	80	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Droughty	0.00	Slope	0.00	Slope	0.00
		Too clayey	0.08	Shrink-swell	0.87	Too clayey	0.06
		Organic matter content low	0.88				

Table 11.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arabrab	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
				Piping	1.00		
Longburn	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
				Large stones content	0.66		
2:							
Awitava	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.62	Depth to water	1.00
3:							
Badland	75	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.01				
Rock outcrop	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.02				
4:							
Barx	60	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
Gapmesa	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.91	Depth to water	1.00
		Depth to bedrock	0.91	Seepage	0.03		
5:							
Barx	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
6:							
Barx	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.55	Depth to water	1.00
7:							
Battlerock	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Piping	0.99	Depth to water	1.00
8:							
Battlerock, saline-sodic	70	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9:							
Battlerock, slightly saline-sodic	70	Very limited Seepage	 1.00	Very limited Piping	 1.00	Very limited Depth to water	 1.00
10:							
Bebeevar	60	Very limited Seepage	 1.00	Somewhat limited Seepage	 0.08	Very limited Cutbanks cave Depth to saturated zone	 1.00 0.90
Walrees	25	Very limited Seepage	 1.00	Somewhat limited Depth to saturated zone	 0.68	Very limited Cutbanks cave Depth to saturated zone Salinity and saturated zone	 1.00 0.14 0.06
11:							
Benally	80	Somewhat limited Seepage	 0.04	Very limited Salinity Piping	 1.00 1.00	Very limited Depth to water	 1.00
12:							
Blackston	55	Very limited Seepage	 1.00	Somewhat limited Piping Seepage	 0.60 0.10	Very limited Depth to water	 1.00
Camac	20	Somewhat limited Slope Depth to bedrock Seepage	 0.82 0.09 0.04	Very limited Piping Thin layer	 1.00 0.83	Very limited Depth to water	 1.00
Rock outcrop	15	Very limited Depth to bedrock Slope	 1.00 0.02	Not rated		Not rated	
13:							
Bluechief	80	Very limited Seepage Depth to bedrock	 1.00 0.88	Somewhat limited Thin layer Seepage	 0.88 0.01	Very limited Depth to water	 1.00
14:							
Bluechief	80	Very limited Seepage Depth to bedrock	 1.00 0.88	Somewhat limited Thin layer Seepage	 0.88 0.01	Very limited Depth to water	 1.00
15:							
Bluechief	75	Very limited Seepage Depth to bedrock	 1.00 0.88	Somewhat limited Thin layer Seepage	 0.88 0.01	Very limited Depth to water	 1.00

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
15:							
Rock outcrop	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
16:							
Cahona	50	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
Pulpit	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.98	Piping	1.00	Depth to water	1.00
		Seepage	0.72	Thin layer	0.98		
17:							
Cahona	35	Somewhat limited		Very limited		Very limited	
		Seepage	0.06	Piping	1.00	Depth to water	1.00
Zigzag	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.74	Thin layer	1.00	Depth to water	1.00
		Slope	0.50	Piping	0.52		
18:							
Camac	35	Somewhat limited		Very limited		Very limited	
		Slope	0.64	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.05	Thin layer	0.74		
		Seepage	0.04				
Kimbeto	35	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
				Salinity	0.50		
Badland	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.02				
19:							
Chimrock, sodic	75	Somewhat limited		Very limited		Very limited	
		Seepage	0.54	Piping	1.00	Depth to water	1.00
20:							
Chimrock	75	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
				Salinity	0.50		
				Seepage	0.03		
21:							
Claysprings	60	Somewhat limited		Very limited		Very limited	
		Slope	0.99	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.78	Hard to pack	1.00		
				Salinity	0.12		
Badland	30	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.01				

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
22:							
Claysprings---	80	Somewhat limited		Very limited		Very limited	
		Slope	0.85	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.53	Hard to pack	0.78		
23:							
Cowboy---	85	Not limited		Somewhat limited		Very limited	
				Hard to pack	0.55	Depth to water	1.00
24:							
Cowboy---	50	Not limited		Very limited		Very limited	
				Hard to pack	1.00	Depth to water	1.00
Kava---	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	Depth to water	1.00
				Hard to pack	0.07		
25:							
Cowboy---	50	Not limited		Very limited		Very limited	
				Hard to pack	1.00	Depth to water	1.00
Kava---	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.66	Thin layer	1.00	Depth to water	1.00
				Hard to pack	0.07		
26:							
Decorock---	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.72	Piping	0.02	Depth to water	1.00
		Depth to bedrock	0.01	Large stones content	0.02		
				Thin layer	0.01		
Salamander---	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.88	Depth to water	1.00
		Gypsum content	1.00	Seepage	0.62		
27:							
Decorock---	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.72	Piping	0.02	Depth to water	1.00
		Depth to bedrock	0.01	Large stones content	0.02		
				Thin layer	0.01		
Salamander---	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Piping	0.88	Depth to water	1.00
		Gypsum content	1.00	Seepage	0.62		
Badland---	10	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
28:							
Dolcan	50	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.84	Thin layer	1.00	Depth to water	1.00
		Slope	0.06	Piping	1.00		
Kucu	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.62	Depth to water	1.00
29:							
Elias	50	Somewhat limited		Very limited		Very limited	
		Seepage	0.06	Piping	1.00	Depth to water	1.00
Yarts	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.04	Depth to water	1.00
30:							
Farb	55	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
				Seepage	0.04		
Rock outcrop	30	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
31:							
Farb	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.03	Seepage	0.03		
Rock outcrop	25	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.03				
Fruitland	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.01	Depth to water	1.00
32:							
Fardraw	85	Not limited		Very limited		Very limited	
				Large stones content	1.00	Depth to water	1.00
				Piping	0.06		
33:							
Farview	60	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
				Seepage	0.03		
Beclabito	20	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.01	Salinity	0.50		
				Thin layer	0.01		

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
33:							
Rock outcrop--------	10	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.15				
34:							
Farview------------	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
				Seepage	0.01		
Rock outcrop--------	35	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.15				
35:							
Fluvents-----------	55	Very limited		Not rated		Very limited	
		Seepage	1.00			Depth to water	1.00
Fluvaquents---------	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	0.99	Cutbanks cave	1.00
						Depth to saturated zone	0.01
36:							
Gladel-------------	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
				Seepage	0.03		
Pulpit-------------	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.98	Piping	1.00	Depth to water	1.00
		Seepage	0.72	Thin layer	0.98		
37:							
Greycap------------	40	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.94	Piping	1.00	Depth to water	1.00
				Thin layer	1.00		
Nomad--------------	40	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.11	Thin layer	0.86		
38:							
Gypsey-------------	80	Very limited		Very limited		Very limited	
		Gypsum content	1.00	Piping	1.00	Depth to water	1.00
		Seepage	0.54	Thin layer	0.91		
		Depth to bedrock	0.17				
39:							
Gypsey-------------	75	Very limited		Very limited		Very limited	
		Gypsum content	1.00	Piping	1.00	Depth to water	1.00
		Seepage	0.54	Thin layer	0.91		
		Depth to bedrock	0.17				

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40:							
Herm	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.03	Piping	0.08	Depth to water	1.00
41:							
Hope	75	Very limited		Very limited		Very limited	
		Gypsum content	1.00	Piping	1.00	Depth to water	1.00
		Seepage	0.54				
42:							
Hoskay	40	Very limited		Very limited		Very limited	
		Gypsum content	1.00	Piping	1.00	Depth to water	1.00
		Seepage	0.04	Salinity	0.50		
Patel	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.06	Piping	1.00	Depth to water	1.00
		Seepage	0.04	Thin layer	0.77		
		Slope	0.03	Salinity	0.50		
Badland	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.24				
43:							
Ives	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.04	Depth to water	1.00
44:							
Jeddito	70	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
Escavada	15	Somewhat limited		Not limited		Very limited	
		Seepage	0.72			Depth to water	1.00
						Slow refill	0.28
45:							
Jeddito	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Piping	0.60	Depth to water	1.00
				Seepage	0.10		
46:							
Juanalo	75	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
				Piping	1.00		
47:							
Katzine	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.68	Depth to water	1.00
		Slope	0.50	Large stones content	0.15		

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
48:							
Lazear	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.32	Piping	1.00		
				Large stones content	0.13		
Rock outcrop	30	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.85				
49:							
Lillings	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.54	Piping	1.00	Depth to water	1.00
				Salinity	0.12		
50:							
Littlehat	35	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
		Slope	0.24	Salinity	1.00		
		Depth to bedrock	0.03	Thin layer	0.66		
Persayo	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.53	Thin layer	1.00	Depth to water	1.00
				Piping	1.00		
				Salinity	0.12		
Badland	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
51:							
Littlehat	35	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.09	Salinity	1.00		
				Thin layer	0.83		
Persayo	30	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.58	Thin layer	1.00	Depth to water	1.00
				Piping	1.00		
				Salinity	0.12		
Nataani	20	Very limited		Very limited		Very limited	
		Gypsum content	1.00	Piping	1.00	Depth to water	1.00
		Seepage	0.72	Thin layer	0.86		
		Depth to bedrock	0.11	Salinity	0.50		
52:							
Littlewater	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Depth to water	1.00
		Slope	1.00	Large stones content	0.08		

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
52:							
Rubbleland	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Large stones content	1.00	Depth to water	1.00
		Slope	1.00	Seepage	1.00		
Rock outcrop	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				
53:							
Longburn	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.41	Large stones content	0.66		
Rock outcrop	20	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.41				
54:							
Longburn	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	1.00	Large stones content	0.66		
Rock outcrop	30	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				
55:							
Mack	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.02	Depth to water	1.00
56:							
Mack	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
57:							
Mack	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
58:							
Mariano	75	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
				Seepage	0.68		
				Salinity	0.50		
59:							
Mariano	75	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
				Seepage	0.68		
				Salinity	0.50		

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60:							
Mariano, Stony------	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
				Seepage	0.68		
				Salinity	0.50		
61:							
Mikett--------------	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.04	Piping	1.00	Slow refill	0.96
				Depth to saturated zone	0.99	Salinity and saturated zone	0.78
				Salinity	0.50	Cutbanks cave	0.10
						Depth to saturated zone	0.01
62:							
Mikett--------------	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.04	Piping	1.00	Slow refill	0.96
						Depth to saturated zone	0.79
						Cutbanks cave	0.10
						Salinity and saturated zone	0.06
63:							
Mikim---------------	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Piping	0.94	Depth to water	1.00
64:							
Mikim---------------	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Piping	0.95	Depth to water	1.00
65:							
Monierco------------	75	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.53	Thin layer	1.00	Depth to water	1.00
66:							
Morefield-----------	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Piping	1.00	Depth to water	1.00
67:							
Morefield-----------	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Piping	1.00	Depth to water	1.00
68:							
Nataani-------------	60	Very limited		Somewhat limited		Very limited	
		Gypsum content	1.00	Piping	0.76	Depth to water	1.00
		Seepage	1.00	Thin layer	0.52		
		Depth to bedrock	0.01	Seepage	0.04		

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68:							
Yogovuci	20	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Gypsum content	1.00	Seepage	0.62		
69:							
Oagamati	70	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.04	Piping	1.00	Depth to water	1.00
				Thin layer	0.70		
				Salinity	0.50		
70:							
Pagayvay	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.75	Depth to water	1.00
				Large stones content	0.08		
71:							
Persayo	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.58	Thin layer	1.00	Depth to water	1.00
				Piping	0.79		
				Salinity	0.12		
Cairn	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Gypsum content	1.00	Thin layer	0.22		
		Depth to bedrock	0.01	Large stones content	0.09		
				Seepage	0.04		
Patel	25	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Piping	1.00	Depth to water	1.00
		Slope	0.03	Thin layer	0.61		
		Depth to bedrock	0.02	Salinity	0.50		
72:							
Persayo	85	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.80	Thin layer	1.00	Depth to water	1.00
		Slope	0.50	Piping	1.00		
73:							
Persayo	75	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.80	Thin layer	1.00	Depth to water	1.00
				Piping	1.00		
74:							
Persayo	50	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.80	Thin layer	1.00	Depth to water	1.00
		Slope	0.01	Piping	0.99		
Yogovuci	35	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Gypsum content	1.00	Salinity	0.50		
				Seepage	0.08		

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
75:							
Picliff	80	Very limited		Very limited		Very limited	
		Gypsum content	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.66	Seepage	0.12		
				Piping	0.04		
76:							
Pogo	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
				Piping	1.00	Cutbanks cave	0.10
77:							
Prater	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.94	Piping	0.26	Depth to water	1.00
		Seepage	0.04				
Dolcan	15	Somewhat limited		Very limited		Very limited	
		Slope	0.94	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.80	Piping	0.99		
				Large stones content	0.15		
78:							
Pulpit	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.69	Thin layer	0.70		
79:							
Ramper	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Piping	1.00	Depth to water	1.00
80:							
Ravola	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Piping	1.00	Depth to water	1.00
				Salinity	0.50		
81:							
Ravola	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Piping	1.00	Depth to water	1.00
82:							
Ravola	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.93	Depth to water	1.00
83:							
Redlands	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
84:							
Redlands	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
85:							
Rizno	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
Gapmesa	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.91	Depth to water	1.00
		Depth to bedrock	0.91	Seepage	0.03		
86:							
Rock outcrop	95	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				
87:							
Rock outcrop	55	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.03				
Farview	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.03	Seepage	0.03		
88:							
Romberg	45	Somewhat limited		Very limited		Very limited	
		Slope	0.04	Large stones content	1.00	Depth to water	1.00
		Seepage	0.04				
Crosscan	40	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.53	Thin layer	1.00	Depth to water	1.00
		Slope	0.04	Seepage	0.12		
89:							
Romberg	35	Somewhat limited		Very limited		Very limited	
		Slope	0.82	Large stones content	1.00	Depth to water	1.00
		Seepage	0.04				
Crosscan	30	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.53	Seepage	0.12		
Rock outcrop	20	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				
90:							
Roubideau	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.56	Thin layer	0.56		

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
91:							
Sharps	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.08	Thin layer	0.81		
92:							
Sharps, dry	45	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.08	Thin layer	0.81		
Gapmesa	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.91	Depth to water	1.00
		Depth to bedrock	0.91	Seepage	0.03		
93:							
Sheek	50	Somewhat limited		Very limited		Very limited	
		Slope	0.04	Large stones content	1.00	Depth to water	1.00
		Seepage	0.04	Seepage	0.03		
Archuleta	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.53	Thin layer	1.00	Depth to water	1.00
		Slope	0.04	Large stones content	0.93		
				Seepage	0.01		
94:							
Sheek	35	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Depth to water	1.00
		Seepage	0.04	Seepage	0.03		
Archuleta	30	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.53	Large stones content	0.93		
				Seepage	0.01		
Rock outcrop	20	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				
95:							
Sheek	40	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Depth to water	1.00
		Seepage	0.04	Seepage	0.03		
Archuleta	25	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.53	Large stones content	0.93		
				Seepage	0.01		

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
95:							
Rock outcrop--------	20	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				
96:							
Sheppard----------	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.25	Depth to water	1.00
97:							
Sideshow----------	90	Not limited		Somewhat limited		Very limited	
				Piping	0.01	Depth to water	1.00
98:							
Sideshow----------	90	Not limited		Somewhat limited		Very limited	
				Piping	0.01	Depth to water	1.00
99:							
Simpatico----------	70	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	0.99	Depth to water	1.00
100:							
Snapill----------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.01	Thin layer	0.04		
101:							
Stephouse----------	55	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
				Seepage	0.01		
Rock outcrop--------	25	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
102:							
Strych----------	50	Very limited		Very limited		Very limited	
		Seepage	1.00	Large stones content	1.00	Depth to water	1.00
		Slope	0.94	Piping	0.60		
Eagleye----------	25	Somewhat limited		Very limited		Very limited	
		Slope	0.82	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.53	Piping	0.60		
				Salinity	0.12		
Rock outcrop--------	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.02				
103:							
Tocito----------	55	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.89	Depth to water	1.00

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
103:							
Gullied land	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Piping	0.88	Depth to water	1.00
		Seepage	0.72				
104:							
Tohona	50	Very limited		Very limited		Very limited	
		Gypsum content	1.00	Hard to pack	1.00	Depth to water	1.00
		Depth to bedrock	0.06	Thin layer	0.77		
				Salinity	0.50		
Kimnoli	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
Claysprings	15	Somewhat limited		Very limited		Very limited	
		Slope	0.88	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.61	Hard to pack	1.00		
				Salinity	0.12		
105:							
Torriorthents	90	Somewhat limited		Very limited		Very limited	
		Slope	0.85	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.69	Large stones content	1.00		
		Seepage	0.43	Piping	0.02		
106:							
Torriorthents	55	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.69	Piping	0.04		
		Seepage	0.43				
Badland	30	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				
107:							
Towaoc	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Depth to water	1.00
		Slope	0.28				
Kwiavu	40	Somewhat limited		Very limited		Very limited	
		Slope	0.12	Piping	1.00	Depth to water	1.00
		Seepage	0.12				
108:							
Towaoc	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Depth to water	1.00
		Slope	1.00				

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
109:							
Tragmon	50	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
		Slope	0.04				
Sheek	35	Somewhat limited		Very limited		Very limited	
		Slope	0.10	Large stones content	1.00	Depth to water	1.00
		Seepage	0.04	Piping	0.91		
110:							
Tupuyci	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones content	0.98	Depth to water	1.00
				Seepage	0.01		
Ives	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.04	Depth to water	1.00
111:							
Typic Torriorthents-	60	Somewhat limited		Very limited		Very limited	
		Slope	0.98	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.61	Large stones content	1.00		
		Seepage	0.43	Piping	0.02		
				Seepage	0.01		
Rock outcrop	25	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.98				
112:							
Ustic Torrifluvents-	80	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
113:							
Ustic Torriorthents-	45	Somewhat limited		Not rated		Very limited	
		Seepage	0.54			Depth to water	1.00
Gullied land	40	Somewhat limited		Not rated		Not rated	
		Slope	0.94				
114:							
Uzacol	35	Not limited		Very limited		Very limited	
				Piping	1.00	Depth to water	1.00
				Salinity	0.12		
Zwicker	30	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.08	Thin layer	0.81	Depth to water	1.00
				Piping	0.01		

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
114:							
Claysprings	20	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.53	Thin layer	1.00	Depth to water	1.00
				Hard to pack	0.78		
115:							
Uzona	75	Somewhat limited		Very limited		Very limited	
		Seepage	0.04	Salinity	1.00	Depth to water	1.00
				Hard to pack	1.00		
116:							
Vessilla	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.03				
Rock outcrop	25	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	0.12				
117:							
Vosburg	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
118:							
Water	100	Not limited		Not rated		Not rated	
119:							
Water	70	Not limited		Not rated		Not rated	
Riverwash	20	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.93		
120:							
Wauquie	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Large stones content	1.00	Depth to water	1.00
		Slope	0.04				
121:							
Wauquie	45	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Large stones content	1.00	Depth to water	1.00
		Slope	0.04				
Dolcan	40	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.80	Thin layer	1.00	Depth to water	1.00
		Slope	0.04	Piping	0.99		
				Large stones content	0.15		

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
122:							
Wauquie	40	Somewhat limited		Very limited		Very limited	
		Slope	0.88	Large stones content	1.00	Depth to water	1.00
		Seepage	0.72				
Dolcan	30	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.80	Piping	0.99		
				Large stones content	0.15		
Rock outcrop	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				
123:							
Wetherill	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.90	Depth to water	1.00
Atlatl	35	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.86	Thin layer	0.86	Depth to water	1.00
		Seepage	0.72				
124:							
Wetherill	60	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
Kucu	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.62	Depth to water	1.00
125:							
Wetherill	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00
126:							
Wetherill	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.12	Piping	1.00	Depth to water	1.00
127:							
Wetherill	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.12	Piping	1.00	Depth to water	1.00
128:							
Wetherill	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.12	Piping	1.00	Depth to water	1.00
129:							
Wetherill	45	Somewhat limited		Very limited		Very limited	
		Seepage	0.72	Piping	1.00	Depth to water	1.00

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
129:							
Wetoe	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.06	Large stones content	0.68	Depth to water	1.00
				Seepage	0.05		
130:							
Wetoe	45	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Seepage	0.12	Depth to water	1.00
		Seepage	1.00				
Nees	20	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	1.00	Seepage	0.62		
				Large stones content	0.32		
Rock outcrop	15	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				
131:							
Yarts	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.04	Depth to water	1.00
132:							
Yogovuci	40	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Gypsum content	1.00	Seepage	0.62		
Taqoci	40	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
				Salinity	0.50		
133:							
Zigzag	60	Somewhat limited		Very limited		Very limited	
		Slope	0.97	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.50	Hard to pack	0.03		
Sideshow	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.64	Piping	0.01	Depth to water	1.00
134:							
Zyme	85	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.76	Thin layer	1.00	Depth to water	1.00
				Piping	0.17		
135:							
Zyme	45	Somewhat limited		Very limited		Very limited	
		Slope	0.72	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.53	Piping	0.21		

Table 11.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
135:							
Katzine, dry	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.68	Depth to water	1.00
		Slope	0.12	Large stones content	0.13		
136:							
Zyme	80	Somewhat limited		Very limited		Very limited	
		Slope	0.85	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.76	Piping	0.17		

Table 12.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
1:												
Arabrab---------	0-4	Loamy sand	SC-SM, SM	A-2	0-5	0-5	95-100	90-100	50-75	15-30	20-25	NP-5
	4-13	Sandy clay loam, clay loam, loam	CL, CL-ML, SC, SC-SM	A-6, A-4	0-5	0-5	85-100	80-100	70-90	40-80	25-35	5-15
	13-16	Clay loam, sandy clay loam, loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-5	0-5	85-100	80-100	70-90	40-80	25-35	5-15
	16-26	Unweathered bedrock			---	---	---	---	---	---	---	---
Longburn--------	0-1	Cobbly fine sandy loam	SC, SC-SM	A-2, A-4	0-10	15-45	75-90	70-85	50-70	30-45	25-30	5-10
	1-4	Very cobbly fine sandy loam	SC-SM, SC	A-2, A-4	0-25	20-70	45-90	40-85	30-70	20-45	25-30	5-10
	4-17	Very cobbly clay loam, very cobbly sandy clay loam	CL, GC, SC	A-2, A-6	0-25	20-70	45-90	40-85	35-85	15-70	25-35	5-15
	17-27	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
2:												
Awitava---------	0-1	Extremely gravelly very fine sandy loam	GC-GM, GM, GW-GM	A-1	0-5	0-20	15-30	10-25	10-25	5-15	20-25	NP-5
	1-4	Gravelly very fine sandy loam	SC-SM, SM, GM, GC-GM	A-2, A-1	0-5	0-15	60-80	55-75	35-70	20-50	20-25	NP-5
	4-10	Very gravelly loam, extremely gravelly sandy loam	GW-GC, GC, GM, GW-GM	A-4, A-2, A-1	0-5	0-20	35-55	30-50	20-50	10-40	20-30	NP-10
	10-21	Extremely gravelly sandy loam			0-5	0-20	35-55	30-50	20-50	10-40	20-25	NP-5
	21-80	Extremely gravelly sandy loam, very gravelly loam	GC-GM, GM, GW-GM	A-1	0-5	0-20	15-30	10-25	10-25	10-20	20-25	NP-5
3:												
Badland---------	0-60	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-80	Bedrock			---	---	---	---	---	---	---	---
4:												
Barx------------	0-3	Loam	CL, CL-ML	A-4	0	0	95-100	90-100	85-95	60-70	25-30	5-10
	3-31	Loam, sandy clay loam, clay loam	CL, CL-ML	A-4	0	0	85-100	85-100	85-95	60-75	25-30	5-10
	31-60	Loam, sandy clay loam, clay loam	CL, CL-ML	A-4	0	0	85-100	85-100	85-95	65-75	25-30	5-10
Gapmesa---------	0-2	Very fine sandy loam	CL-ML, ML	A-4	0	0	90-100	90-100	85-95	50-65	20-25	NP-5
	2-21	Gravelly very fine sandy loam, loam	CL, CL-ML	A-4	0	0	70-100	65-100	55-95	50-60	25-30	5-10
	21-28	Gravelly sandy loam	GC-GM, SC-SM, SM, GM	A-2	0-5	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
	28-38	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
5:												
Barx	0-3	Loam	CL, CL-ML	A-4	0	0	95-100	90-100	85-95	60-70	25-30	5-10
	3-31	Loam, sandy clay loam, clay loam	CL, CL-ML	A-4	0	0	85-100	85-100	85-95	60-75	25-30	5-10
	31-80	Loam, sandy clay loam, clay loam	CL, CL-ML	A-4	0	0	85-100	85-100	85-95	65-75	25-30	5-10
6:												
Barx	0-3	Very fine sandy loam	CL-ML, ML	A-4	0	0	100	100	90-100	50-60	15-25	NP-10
	3-9	Fine sandy loam	SC-SM, SM	A-4	0	0	100	100	90-100	40-50	15-25	NP-10
	9-23	Sandy clay loam	CL	A-6	0	0	100	100	90-100	50-70	35-45	15-25
	23-36	Sandy clay loam	CL	A-6	0	0	100	100	90-100	50-60	35-45	15-25
	36-55	Sandy clay loam	CL	A-6	0	0	100	100	90-100	50-60	25-35	10-15
	55-60	Sandy clay loam	CL	A-6	0	0	100	100	90-100	50-60	25-35	10-15
7:												
Battlerock	0-10	Clay loam	CL	A-6	0	0-5	85-100	80-100	75-100	60-75	30-35	10-15
	10-60	Clay loam, loam	CL	A-4, A-6	0	0-5	85-100	80-100	70-100	50-75	25-35	5-15
8:												
Battlerock, saline-sodic	0-1	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	30-35	5-10
	1-14	Stratified loam to silty clay loam	CL, CL-ML	A-6, A-4	0	0	100	100	85-100	60-95	25-40	5-20
	14-80	Stratified loamy sand to silt loam	CL, CL-ML	A-4	0	0	100	100	85-100	60-90	25-30	5-10
9:												
Battlerock, slightly saline-sodic	0-3	Silty clay loam	ML	A-4, A-6	0	0	100	95-100	90-100	85-95	30-50	5-20
	3-6	Clay loam	CL	A-6	0	0	100	95-100	90-100	70-80	30-35	10-15
	6-80	Stratified loam to silty clay loam	CL-ML, CL	A-6, A-4	0	0	100	95-100	85-100	60-95	25-35	5-15

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
10:												
Bebeevar---------	0-4	Loamy sand	SM	A-1, A-2	0	0-15	95-100	90-100	40-60	15-30	---	NP
	4-70	Stratified very gravelly coarse sand to very fine sandy loam	SM	A-1, A-2	0	0-15	65-85	60-85	30-50	10-30	---	NP
Walrees---------	0-4	Fine sandy loam	SC-SM	A-4	0	0	100	100	85-100	35-50	20-25	5-10
	4-30	Stratified loamy fine sand to silty clay loam	CL	A-6	0	0	100	100	80-100	55-75	25-30	10-15
	30-62	Stratified very gravelly coarse sand to sand	SP, SP-SM	A-1	0-10	0-10	65-80	60-75	25-40	0-10	0-15	NP
11:												
Benally---------	0-3	Fine sandy loam	CL-ML, SC-SM	A-4	0	0	95-100	90-100	75-90	50-65	25-35	5-10
	3-14	Fine sandy loam, loam	CL	A-6	0	0	95-100	90-100	75-90	50-65	25-35	10-15
	14-41	Clay loam	CL	A-6	0	0	95-100	90-100	80-95	55-75	35-40	15-20
	41-65	Silty clay loam	CL	A-7	0	0	100	100	95-100	85-95	40-45	20-25
12:												
Blackston-------	0-3	Gravelly sandy loam	SC-SM	A-2, A-4	0	10-15	80-90	65-85	50-65	25-40	20-25	5-10
	3-9	Sandy loam	SC-SM	A-4	0	0	90-100	85-95	50-70	35-50	20-25	5-10
	9-15	Gravelly sandy clay loam	SC	A-6	0	0-10	70-85	60-70	35-55	30-45	30-40	10-20
	15-35	Very gravelly coarse sandy loam	GC-GM, SC-SM	A-1, A-2	0	15-25	50-70	40-60	25-40	15-25	20-25	5-10
	35-70	Very cobbly loamy coarse sand, very cobbly coarse sand	GM, SM	A-1	0-10	25-30	50-65	40-55	20-30	5-20	0-15	NP

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
12:												
Camac----------	0-3	Very cobbly fine sandy loam	GC-GM, SC-SM	A-2	0-10	25-45	50-75	45-70	30-50	15-30	15-20	5-10
	3-17	Gravelly loam, gravelly fine sandy loam, gravelly sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-10	10-15	70-90	65-85	50-65	35-55	20-30	5-15
	17-31	Clay loam, silt loam, loam, extremely parachannery clay loam	CL	A-6	0	0	95-100	90-100	75-90	60-80	25-40	10-20
	31-41	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-80	Unweathered bedrock			---	---	---	---	---	---	---	---
13:												
Bluechief-------	0-6	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	90-100	70-85	40-55	20-25	NP-5
	6-23	Fine sandy loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4, A-2	0	0	100	95-100	60-85	30-55	20-25	NP-5
	23-29	Fine sandy loam, sandy loam	SM	A-4, A-2	0	0-5	90-100	85-100	50-85	30-55	20-25	NP-5
	29-39	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
14:												
Bluechief-------	0-6	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	90-100	70-85	40-55	20-25	NP-5
	6-23	Fine sandy loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4, A-2	0	0	100	95-100	60-85	30-55	20-25	NP-5
	23-29	Fine sandy loam, sandy loam	SM	A-4, A-2	0	0-5	90-100	85-100	50-85	30-55	20-25	NP-5
	29-39	Unweathered bedrock			---	---	---	---	---	---	---	---
15:												
Bluechief-------	0-6	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	90-100	70-85	40-55	20-25	NP-5
	6-23	Fine sandy loam, sandy loam	CL-ML, ML, SC-SM, SM	A-4, A-2	0	0	100	95-100	60-85	30-55	20-25	NP-5
	23-29	Fine sandy loam, sandy loam	SM	A-4, A-2	0	0-5	90-100	85-100	50-85	30-55	20-25	NP-5
	29-39	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-80	Unweathered bedrock			---	---	---	---	---	---	---	---
16:												
Cahona----------	0-7	Silt loam	CL, CL-ML	A-4	0	0	95-100	95-100	85-95	60-75	25-30	5-10
	7-30	Silty clay loam, clay loam, loam	CL, CL-ML	A-6	0	0	95-100	95-100	90-100	60-80	25-35	5-15
	30-45	Silty clay loam, clay loam, loam	CL, CL-ML	A-6	0	0	95-100	95-100	90-100	60-80	25-35	5-15
	45-60	Silt loam, loam	CL, CL-ML	A-4	0	0	95-100	95-100	85-95	60-75	25-30	5-10

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
16:												
Pulpit----------	0-3	Silt loam	CL, CL-ML	A-4	0	0	90-100	90-100	85-95	60-75	25-30	5-10
	3-10	Silt loam, clay loam, silty clay loam, loam	CL	A-6	0	0	95-100	95-100	95-100	80-95	30-35	5-15
	10-24	Silt loam, loam, fine sandy loam, clay loam	CL, CL-ML, ML	A-4	0	0	90-100	90-100	90-95	65-80	20-30	NP-10
	24-34	Unweathered bedrock			---	---	---	---	---	---	---	---
17:												
Cahona----------	0-2	Gravelly loam	GC-GM, GC, CL-ML, CL	A-4	0-10	0-15	60-80	55-75	50-70	35-55	20-30	NP-10
	2-36	Clay loam, cobbly clay loam, cobbly loam, loam	CL-ML, CL, SC, SC-SM	A-6, A-4	0-10	5-45	75-95	70-90	60-85	45-80	25-35	5-15
	36-60	Cobbly loam, gravelly loam	CL, CL-ML, SC, SC-SM	A-4	0-10	15-45	75-95	70-90	60-85	45-80	20-30	NP-10
Zigzag----------	0-3	Clay loam	CL	A-6	0-1	0-1	85-95	75-95	70-85	70-80	30-40	10-20
	3-13	Parachannery clay loam			0-5	0-5	85-100	80-100	75-100	60-80	30-40	10-20
	13-23	Weathered bedrock			---	---	---	---	---	---	---	---
18:												
Camac-----------	0-3	Very cobbly fine sandy loam	GC-GM, SC-SM	A-2	0-10	25-45	50-75	45-70	30-50	15-30	15-20	5-10
	3-16	Gravelly loam, gravelly fine sandy loam, gravelly sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0-10	10-15	70-90	65-85	50-65	35-55	20-30	5-15
	16-34	Clay loam, silt loam, loam	CL	A-6	0	0	95-100	90-100	75-90	60-80	25-40	10-20
	34-44	Weathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
18:												
Kimbeto---------	0-2	Fine sandy loam	SC-SM	A-4	0	0	90-100	75-90	60-85	35-50	25-30	5-10
	2-10	Loam	CL	A-6	0	0	90-100	85-100	70-80	50-65	30-35	10-15
	10-54	Fine sandy loam, loam	SC	A-6	0	0	85-90	75-90	60-85	35-50	25-35	10-15
	54-80	Cobbly sandy clay loam	SC	A-6	0	15-30	85-90	70-80	50-65	35-50	30-35	10-15
Badland---------	0-80	Weathered bedrock			---	---	---	---	---	---	---	---
19:												
Chimrock, sodic-	0-5	Loam	CL-ML, CL	A-4	0	0	95-100	90-100	85-100	60-80	25-30	5-10
	5-17	Loam, silt loam, silty clay loam, clay loam	CL	A-6	0	0	95-100	95-100	90-100	65-95	30-35	10-15
	17-68	Loam, sandy clay loam, silt loam, clay loam	SC, CL, CL-ML, SC-SM	A-4	0	0	95-100	95-100	80-100	35-80	25-30	5-10
	68-80	Loam, silty clay loam, clay loam	CL-ML	A-4	0	0	95-100	95-100	80-100	35-80	25-39	5-10
20:												
Chimrock--------	0-15	Very fine sandy loam	CL-ML, ML	A-4	0	0	95-100	95-100	85-95	50-65	20-25	NP-5
	15-32	Loam, clay loam	CL-ML, CL	A-6, A-4	0	0	95-100	95-100	85-100	60-75	25-35	5-15
	32-80	Sandy loam, loam, silt loam	SC-SM, SM, ML, CL-ML	A-4, A-2	0	0	95-100	95-100	50-95	15-75	20-30	NP-10
21:												
Claysprings-----	0-2	Extremely gravelly sandy clay loam	GC	A-2	25-40	10-15	25-45	20-40	15-30	10-25	30-35	10-15
	2-4	Clay	CH, CL	A-7	0	0	90-95	85-90	75-85	65-80	45-60	20-30
	4-12	Silty clay, clay	CH, CL	A-7	0	0	100	100	90-100	75-90	45-60	20-30
	12-22	Weathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
21:												
Badland---------	0-80	Weathered bedrock			---	---	---	---	---	---	---	---
22:												
Claysprings-----	0-3	Very stony clay loam	CL	A-6	25-50	5-15	80-95	70-85	65-85	50-65	30-35	10-15
	3-18	Clay, clay loam	CH, CL	A-7	0-5	0-5	90-100	90-100	85-100	70-95	40-60	15-30
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
23:												
Cowboy----------	0-9	Clay	CL, CH	A-7	0	0-1	95-100	95-100	90-100	75-95	40-65	15-40
	9-80	Stratified silty clay to clay	CL, CH	A-7	0	0	100	100	90-100	75-95	40-65	15-40
24:												
Cowboy----------	0-5	Silty clay	ML, MH	A-7	0	0	95-100	95-100	95-100	90-95	45-70	15-35
	5-61	Silty clay, clay	CH, CL	A-7	0	0	95-100	95-100	95-100	85-95	40-65	15-40
	61-71	Weathered bedrock			---	---	---	---	---	---	---	---
Kava------------	0-2	Silty clay loam	ML	A-7, A-6, A-4	0	0	95-100	95-100	95-100	85-95	30-45	5-15
	2-5	Clay, silty clay	CH, CL	A-7	0	0	95-100	95-100	90-100	75-95	45-60	20-35
	5-15	Silty clay, clay	CL, CH	A-7	0	0	95-100	95-100	90-100	75-95	45-60	20-35
	15-25	Weathered bedrock			---	---	---	---	---	---	---	---
25:												
Cowboy----------	0-5	Silty clay	ML, MH	A-7	0	0	95-100	95-100	95-100	90-95	45-70	15-35
	5-61	Silty clay, clay	CH, CL	A-7	0	0	95-100	95-100	95-100	85-95	40-65	15-40
	61-71	Weathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
25:												
Kava	0-2	Silty clay loam	ML	A-7, A-6, A-4	0	0	95-100	95-100	95-100	85-95	30-45	5-15
	2-5	Clay, silty clay	CH, CL	A-7	0	0	95-100	95-100	90-100	75-95	45-60	20-35
	5-15	Silty clay, clay	CL, CH	A-7	0	0	95-100	95-100	90-100	75-95	45-60	20-35
	15-25	Weathered bedrock			---	---	---	---	---	---	---	---
26:												
Decorock	0-5	Very gravelly clay loam	GC	A-2, A-6	0-5	5-25	35-55	30-50	30-50	20-40	30-40	10-15
	5-10	Gravelly silty clay loam, gravelly clay loam	CL, GC, SC	A-6	0-5	5-25	60-80	55-75	50-75	40-60	30-40	10-15
	10-15	Gravelly clay loam, gravelly silty clay loam, gravelly clay	CL, GC	A-7	0-5	5-25	60-80	55-75	50-75	40-70	40-50	15-25
	15-26	Gravelly clay, gravelly clay loam	CL, GC	A-7, A-6	0-5	5-25	60-80	55-75	50-75	40-70	30-45	10-20
	26-58	Extremely cobbly clay, extremely cobbly clay loam	CL, GC, GP-GC, GW-GC, CH	A-7, A-2	0-5	30-60	20-80	15-75	15-75	10-70	40-60	15-35
	58-68	Weathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
26:												
Salamander------	0-3	Very fine sandy loam	CL-ML	A-4	0	0	85-100	80-100	70-95	40-65	25-30	5-10
	3-10	Sandy loam, sandy clay loam, loam	CL-ML, CL	A-4	0	0-5	85-100	80-100	50-95	25-75	20-30	NP-10
	10-27	Very gravelly sandy loam, extremely gravelly loam	GW-GC, GC	A-2	0	0-15	15-30	10-25	5-25	0-20	20-30	NP-10
	27-35	Very gravelly gypsiferous sandy loam, extremely gravelly gypsiferous coarse sandy loam	GW-GM	A-1	0	0-15	15-30	10-25	5-20	0-10	20-25	NP-5
	35-50	Very gravelly gypsiferous sandy loam	GW-GM, GC-GM, GM	A-1	0	0-15	35-55	30-50	20-35	10-20	20-25	NP-5
	50-80	Very gravelly gypsiferous loamy sand, extremely gravelly gypsiferous fine sandy loam	SC-SM, SM, SP-SM, SW-SM	A-2, A-1	0	5-15	60-80	55-75	30-55	10-20	20-25	NP-5

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
27:												
Decorock--------	0-5	Very gravelly clay loam	GC	A-2, A-6	0-5	5-25	35-55	30-50	30-50	20-40	30-40	10-15
	5-10	Gravelly silty clay loam, gravelly clay loam	CL, GC, SC	A-6	0-5	5-25	60-80	55-75	50-75	40-60	30-40	10-15
	10-15	Gravelly clay loam, gravelly silty clay loam, gravelly clay	CL, GC	A-7	0-5	5-25	60-80	55-75	50-75	40-70	40-50	15-25
	15-26	Gravelly clay, gravelly clay loam	CL, GC	A-7, A-6	0-5	5-25	60-80	55-75	50-75	40-70	30-45	10-20
	26-58	Extremely cobbly clay, extremely cobbly clay loam	CL, GC, GP-GC, GW-GC, CH	A-7, A-2	0-5	30-60	20-80	15-75	15-75	10-70	40-60	15-35
	58-68	Weathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
27:												
Salamander------	0-3	Very fine sandy loam	CL-ML	A-4	0	0	85-100	80-100	70-95	40-65	25-30	5-10
	3-10	Sandy loam, sandy clay loam, loam	CL-ML, CL	A-4	0	0-5	85-100	80-100	50-95	25-75	20-30	NP-10
	10-27	Very gravelly sandy loam, extremely gravelly loam	GC, GW-GC	A-2	0	0-15	15-30	10-25	5-25	0-20	20-30	NP-10
	27-35	Very gravelly gypsiferous sandy loam, extremely gravelly gypsiferous coarse sandy loam	GW-GM	A-1	0	0-15	15-30	10-25	5-20	0-10	20-25	NP-5
	35-50	Very gravelly gypsiferous sandy loam	GW-GM, GC-GM, GM	A-1	0	0-15	35-55	30-50	20-35	10-20	20-25	NP-5
	50-80	Very gravelly gypsiferous loamy sand, extremely gravelly gypsiferous fine sandy loam	SC-SM, SM, SP-SM, SW-SM	A-2, A-1	0	5-15	60-80	55-75	30-55	10-20	20-25	NP-5
Badland---------	0-80	Weathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
28:												
Dolcan----------	0-3	Very gravelly loam	GC-GM, GM, SC-SM, SM	A-1, A-2, A-3, A-4	0-15	0-25	20-80	15-75	10-65	5-40	20-25	NP-5
	3-6	Gravelly loam, clay loam, cobbly clay loam	CL	A-6	0-10	0-35	75-100	70-100	65-100	60-80	30-35	10-15
	6-10	Loam, clay loam, gravelly clay loam	CL	A-6	0-10	0-35	75-100	70-100	65-100	60-80	30-35	10-15
	10-20	Weathered bedrock			---	---	---	---	---	---	---	---
Kucu----------	0-2	Loam	CL, CL-ML	A-4	0-5	0-5	85-100	80-100	70-95	50-75	25-30	5-10
	2-15	Clay loam, silt loam, loam	CL-ML, CL	A-4	0-5	0-5	85-100	80-100	70-95	50-80	25-30	5-10
	15-38	Very gravelly sandy loam	GC-GM, GM, GW-GM	A-4, A-2, A-1	0-10	5-25	35-55	30-50	20-50	10-40	20-25	NP-5
	38-80	Extremely gravelly sandy loam	GW-GM, GW	A-1	0-5	5-35	15-30	10-25	5-20	0-10	20-25	NP-5
29:												
Elias----------	0-6	Loam	CL-ML, SC-SM	A-4	0	0	95-100	95-100	70-85	40-55	20-25	5-10
	6-39	Clay loam, loam, sandy clay loam	SC-SM, SC, CL, CL-ML	A-2-4, A-4	0	0	95-100	95-100	60-95	30-75	25-30	5-15
	39-80	Clay loam, loam, sandy loam	SC-SM, SC, CL-ML, CL	A-4, A-2-4	0	0	95-100	95-100	60-95	30-75	20-30	5-15
Yarts----------	0-3	Fine sandy loam	ML, SC-SM, SM, CL-ML	A-4	0	0	95-100	90-100	65-80	45-55	20-25	NP-5
	3-11	Loam, sandy loam, fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-90	30-55	20-25	NP-5
	11-60	Sandy loam, loam	SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-70	30-40	20-30	NP-10

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
30:												
Farb----------	0-3	Sandy loam	SC-SM	A-4	0	0	100	100	65-80	35-50	20-25	NP-5
	3-16	Sand, sandy loam, fine sandy loam	SC-SM	A-2, A-4	0	0	100	100	50-80	15-50	20-25	NP-5
	16-26	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
31:												
Farb----------	0-1	Very channery sandy loam	GM, GC-GM	A-2, A-1	0-5	0-5	30-55	30-50	25-50	20-40	20-25	NP-5
	1-12	Channery sandy loam	SC-SM, SM, GC-GM, GM	A-1, A-2	0-5	0-5	55-80	55-75	35-50	20-30	20-25	NP-5
	12-22	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Fruitland-------	0-4	Fine sandy loam	ML, SC-SM, SM, CL-ML	A-4	0	0	95-100	90-100	65-80	45-55	20-25	NP-5
	4-60	Fine sandy loam	SC-SM, SM, CL-ML, ML	A-4	0	0	95-100	90-100	65-80	45-55	20-25	NP-5
32:												
Fardraw---------	0-9	Very cobbly loam	GC, GC-GM, SC, SC-SM	A-2, A-4	0-15	30-65	50-75	45-70	40-65	30-50	25-30	5-10
	9-13	Very cobbly clay loam	CL, GC, SC	A-6	0-15	30-65	50-75	45-70	40-65	35-55	30-35	10-15
	13-80	Very cobbly clay loam, very cobbly clay, very cobbly sandy clay loam	CL, GC	A-6, A-7	0-15	30-65	50-75	45-70	45-70	40-65	35-50	15-25

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
33:												
Farview---------	0-2	Channery loamy sand	SM	A-2	0	0-10	70-80	65-75	50-60	15-30	0-15	NP
	2-6	Channery sandy loam, channery fine sandy loam, fine sandy loam	SC-SM	A-2	0	0-10	70-95	65-90	60-80	20-35	15-20	5-10
	6-16	Unweathered bedrock			---	---	---	---	---	---	---	---
Beclabito-------	0-4	Fine sandy loam	SC-SM	A-2, A-4	0	0	80-100	75-100	70-90	30-50	15-20	5-10
	4-14	Fine sandy loam, sandy clay loam	CL, SC	A-6	0	0	80-100	75-100	70-90	45-65	25-35	10-15
	14-36	Fine sandy loam, sandy clay loam	CL, SC	A-6	0	0	80-100	75-100	70-90	45-65	25-35	10-15
	36-45	Sandy loam, sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-10	90-100	85-100	65-85	40-60	20-35	5-15
	45-56	Clay loam, silty clay loam	CL	A-6	0	0-10	90-100	85-100	75-90	50-70	35-40	15-20
	56-66	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-80	Unweathered bedrock			---	---	---	---	---	---	---	---
34:												
Farview---------	0-2	Channery loamy sand	SM	A-2	0	0-10	70-80	65-75	50-60	15-30	0-15	NP
	2-9	Channery sandy loam, channery fine sandy loam, fine sandy loam	SC-SM	A-2	0	0-10	70-95	65-90	60-80	20-35	15-20	5-10
	9-19	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
34:												
Rock outcrop----	0-80	Unweathered bedrock			---	---	---	---	---	---	---	---
35:												
Fluvents--------	0-6	Variable			---	---	---	---	---	---	---	---
	6-60	Stratified very gravelly sand to loamy sand	GP, GP-GM, GW, GW-GM	A-1, A-2, A-3	0-10	0-20	35-85	30-70	20-60	0-35	0-14	NP-5
Fluvaquents-----	0-8	Variable	CL, ML, SC, SM	A-2, A-4, A-6	0	0-10	55-100	50-90	25-80	5-65	15-40	NP-25
	8-60	Stratified very gravelly sand to sandy loam	GM, SM	A-1	0	0-25	45-70	35-65	15-40	5-20	---	NP
36:												
Gladel----------	0-3	Fine sandy loam	SC, SC-SM	A-2, A-4	0-10	0-10	75-90	70-85	50-70	30-45	25-30	5-10
	3-11	Flaggy fine sandy loam, sandy loam, fine sandy loam	ML, SC-SM, SM	A-4	0-15	0-10	75-100	70-100	50-85	30-55	20-25	NP-5
	11-18	Flaggy fine sandy loam, sandy loam, fine sandy loam	ML, SC-SM, SM	A-4	0-15	0-30	75-100	70-100	50-85	30-55	20-25	NP-5
	18-28	Unweathered bedrock			---	---	---	---	---	---	---	---
Pulpit----------	0-3	Silt loam	CL, CL-ML	A-4	0	0	90-100	90-100	85-95	60-75	25-30	5-10
	3-10	Silt loam, clay loam, silty clay loam, loam	CL	A-6	0	0	95-100	95-100	95-100	80-95	30-35	5-15
	10-24	Silt loam, loam, fine sandy loam, clay loam	CL, CL-ML, ML	A-4	0	0	90-100	90-100	90-95	65-80	20-30	NP-10
	24-34	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
37:												
Greycap---------	0-2	Loam	ML, CL-ML	A-4	0	0	85-100	80-100	75-95	60-75	20-25	NP-5
	2-6	Clay loam, silty clay loam	CL-ML, CL	A-4	0	0	85-100	80-100	75-100	75-95	25-30	5-10
	6-16	Weathered bedrock			---	---	---	---	---	---	---	---
Nomad-----------	0-2	Loamy sand	SC-SM, SM	A-2	0	0	95-100	95-100	50-75	15-30	20-25	NP-5
	2-14	Loam	CL-ML, ML	A-4	0	0	85-100	80-100	70-95	50-75	20-25	NP-5
	14-21	Loam, clay loam	CL-ML, ML	A-4	0	0	85-100	80-100	70-95	50-75	20-25	NP-5
	21-30	Clay	CL	A-6	0	0	85-100	80-100	75-100	60-95	30-35	10-15
	30-40	Weathered bedrock			---	---	---	---	---	---	---	---
38:												
Gypsey----------	0-3	Sandy clay loam	CL-ML, CL, SC-SM, SC	A-4	0	0	95-100	95-100	80-90	35-55	25-30	5-10
	3-9	Loam, silty clay loam, clay loam	CL-ML, CL	A-4	0	0	95-100	95-100	85-100	60-80	25-30	5-10
	9-28	Gypsiferous loam, gypsiferous silty clay loam, gypsiferous silt loam	CL-ML, CL	A-6, A-4	0	0	95-100	95-100	85-100	60-80	25-35	5-15
	28-38	Weathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
39:												
Gypsey----------	0-3	Sandy clay loam	CL, CL-ML, SC, SC-SM	A-4	0	0	95-100	95-100	80-90	35-55	25-30	5-10
	3-9	Loam, silty clay loam, clay loam	CL-ML, CL	A-4	0	0	95-100	95-100	85-100	60-80	25-30	5-10
	9-28	Gypsiferous loam, gypsiferous silty clay loam, gypsiferous silt loam	CL-ML, CL	A-6, A-4	0	0	95-100	95-100	85-100	60-80	25-35	5-15
	28-38	Weathered bedrock			---	---	---	---	---	---	---	---
40:												
Herm----------	0-12	Loam	CL-ML, CL	A-4	0-1	0-1	95-100	95-100	85-95	60-75	25-30	5-10
	12-15	Clay loam, loam	CL, CL-ML	A-6, A-4	0	0-1	95-100	95-100	85-95	60-80	25-35	5-15
	15-73	Clay loam, gravelly clay	CL	A-7, A-6	0	0-1	85-100	85-100	80-95	60-90	35-45	15-25
41:												
Hope----------	0-3	Silty clay loam	ML	A-7, A-6, A-4	0	0	95-100	95-100	95-100	85-95	30-45	5-15
	3-10	Silty clay loam, silt loam, loam	ML	A-4, A-7, A-6	0	0	95-100	90-100	85-100	60-95	30-45	5-15
	10-80	Gypsiferous silty clay loam, silt loam, silty clay loam, loam, gypsiferous silt loam	ML	A-7, A-6, A-4	0	0	95-100	90-100	85-100	60-95	30-45	5-15

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
42:												
Hoskay----------	0-2	Channery loam	CL	A-6	0	0-10	70-80	65-75	60-70	50-60	25-35	10-15
	2-6	Clay loam, clay	CH, CL	A-7	0	0	90-100	85-100	80-95	60-75	40-55	20-30
	6-14	Clay loam, clay	CH, CL	A-7	0	0	90-100	85-100	80-95	60-75	40-55	20-30
	14-27	Parachannery gypsiferous clay loam, gypsiferous clay, gypsiferous clay loam	CL	A-6	0	0	90-100	85-100	80-95	60-75	40-55	20-30
	27-65	Stratified channery sandy clay loam to silty clay, parachannery clay loam	CH, CL	A-6, A-7	0	0-10	80-100	75-100	65-90	50-75	35-55	15-30
Patel-----------	0-2	Channery silty clay loam	CL	A-6	0	0-10	65-80	60-75	55-70	50-65	35-40	15-20
	2-12	Clay, silty clay	CL	A-7	0	0	90-100	85-100	80-95	70-90	40-50	20-25
	12-16	Silty clay loam, clay loam, clay	CL	A-7	0	0	90-100	90-100	85-95	75-90	40-50	20-25
	16-33	Clay loam, silty clay loam	CL	A-6, A-7	0	0	90-100	90-100	85-95	75-90	35-45	15-20
	33-43	Weathered bedrock			---	---	---	---	---	---	---	---
Badland---------	0-60	Weathered bedrock			---	---	---	---	---	---	---	---
43:												
Ives------------	0-1	Sandy loam	SM, SC-SM	A-2, A-4	0-1	0-5	95-100	95-100	60-70	30-40	20-25	NP-5
	1-80	Stratified loamy sand to sandy loam	SM, SC-SM	A-4, A-2	0-1	0-5	95-100	95-100	50-75	15-40	20-25	NP-5

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
44:												
Jeddito---------	0-9	Loamy fine sand	SM	A-2	0	0	100	100	80-95	15-30	15-20	NP-5
	9-27	Loamy fine sand, loamy very fine sand	SC-SM	A-2, A-4	0	0	100	100	75-95	30-45	15-25	5-10
	27-60	Stratified fine sand to silty clay loam	SC-SM	A-2, A-4	0	0	100	100	85-100	20-40	20-25	5-10
Escavada--------	0-4	Very fine sandy loam	ML	A-4	0	0	100	100	95-100	60-75	15-25	NP-5
	4-80	Stratified fine sand to silty clay	SM	A-2	0	0	95-100	90-100	85-90	10-30	0-15	NP
45:												
Jeddito---------	0-5	Loamy fine sand	SM	A-2	0	0	95-100	90-100	75-85	20-35	15-20	NP
	5-16	Loamy sand, loamy fine sand	SM	A-2	0	0	95-100	90-100	75-85	15-25	15-20	NP
	16-70	Stratified loamy sand to clay loam	SC-SM	A-2, A-4	0	0	95-100	90-100	70-80	25-45	20-25	5-10
46:												
Juanalo---------	0-1	Gravelly fine sandy loam	SC-SM, GC-GM, SM, GM	A-4	0	0-10	60-80	55-75	40-65	25-40	20-25	NP-5
	1-3	Loam, fine sandy loam	ML, CL-ML	A-4	0	0-5	85-100	80-100	55-95	35-75	20-30	NP-10
	3-9	Loam, silt loam, clay loam	CL-ML, CL	A-4	0	0-5	85-100	80-100	75-95	55-90	25-30	5-10
	9-11	Very channery loam, channery silt loam, gravelly clay loam	ML, GC, GC-GM, GM	A-4	0	10-30	30-80	30-75	30-75	20-70	20-30	NP-10
	11-21	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
47:												
Katzine---------	0-2	Very gravelly fine sandy loam, very gravelly loam	GC, GC-GM, GW-GC	A-4, A-1, A-2	0-25	0-25	35-55	30-50	20-50	10-40	25-30	5-10
	2-7	Very gravelly loam, very gravelly sandy loam	GC, GC-GM	A-1, A-2, A-4	0-25	0-25	35-55	30-50	25-50	20-40	25-30	5-10
	7-80	Very gravelly sandy loam, very gravelly loam	GC-GM	A-1	0-30	0-35	15-30	10-25	5-25	0-20	20-25	NP-5
48:												
Lazear----------	0-5	Very stony loam	GC-GM, SC-SM	A-2, A-4	25-60	15-25	50-80	40-80	35-60	25-50	25-30	5-10
	5-15	Stony loam, loam, clay loam	CL, CL-ML	A-6	0-30	10-25	75-95	70-90	50-70	45-70	25-35	5-15
	15-19	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
49:												
Lillings--------	0-2	Silty clay loam	ML	A-6	0	0-5	95-100	90-100	90-100	75-95	35-40	10-15
	2-60	Stratified silt loam to silty clay loam	CL, CL-ML	A-4, A-6	0	0-5	95-100	90-100	90-100	65-85	25-35	5-15
50:												
Littlehat-------	0-2	Silt loam	CL	A-6	0	0	100	100	100	80-95	25-30	10-15
	2-36	Loam, silt loam, silty clay loam, parachannery silt loam	CL	A-6	0	0	90-100	85-100	85-100	80-95	25-35	10-20
	36-46	Weathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
50:												
Persayo---------	0-2	Silt loam	CL-ML	A-4	0	0	95-100	90-100	80-90	70-80	25-30	5-10
	2-6	Loam, silt loam	CL	A-6	0	0	100	90-100	80-90	75-85	25-35	10-15
	6-18	Silty clay loam, clay loam	CL	A-6	0	0	100	90-100	80-90	75-85	35-40	15-20
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
Badland---------	0-60	Weathered bedrock			---	---	---	---	---	---	---	---
51:												
Littlehat-------	0-2	Silt loam	CL	A-6	0	0	100	100	100	80-95	25-30	10-15
	2-31	Loam, silt loam, silty clay loam, parachannery silt loam	CL	A-6	0	0	90-100	85-100	85-100	80-95	25-35	10-20
	31-41	Weathered bedrock			---	---	---	---	---	---	---	---
Persayo---------	0-2	Very fine sandy loam	CL-ML	A-4	0	0	95-100	90-100	75-85	60-75	25-30	5-10
	2-6	Loam, silt loam	CL	A-6	0	0	100	90-100	80-90	75-85	25-35	10-15
	6-17	Silty clay loam, clay loam	CL	A-6	0	0	100	90-100	80-90	75-85	35-40	15-20
	17-27	Weathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
51:												
Nataani---------	0-3	Very fine sandy loam	CL-ML	A-4	0	0	100	100	85-100	65-80	15-20	5-10
	3-9	Loam, very fine sandy loam	CL-ML	A-4	0	0	100	100	85-100	65-85	20-25	5-10
	9-21	Gypsiferous silt loam			0	0	100	100	85-100	65-85	20-25	5-10
	21-30	Silt loam, very fine sandy loam	CL-ML	A-4	0	0	100	100	85-100	65-85	15-20	5-10
	30-40	Weathered bedrock			---	---	---	---	---	---	---	---
52:												
Littlewater-----	0-1	Very stony slightly decomposed plant material	PT	A-8	0-25	0-25	35-55	30-50	---	---	---	---
	1-7	Very gravelly sandy loam, very gravelly silt loam	GC-GM	A-1, A-2, A-4	0-25	0-25	35-55	30-50	20-45	10-40	20-25	NP-5
	7-20	Very gravelly loam, very gravelly sandy loam	GC-GM	A-1, A-2, A-4	0-25	0-25	35-55	30-50	20-45	10-40	20-25	NP-5
	20-31	Very gravelly loam, very gravelly sandy loam	GC-GM	A-2, A-4, A-1	0-25	0-25	35-55	30-50	20-45	10-40	20-25	NP-5
	31-80	Very gravelly loam, very gravelly sandy loam	GC, GC-GM, GW-GC	A-1, A-2, A-4	0-25	0-25	35-55	30-50	20-45	10-40	25-30	5-10
Rubbleland------	0-60	Fragmental material		A-1	50-60	20-30	0-10	0-5	0-5	0-5	---	NP
Rock outcrop----	0-80	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
53:												
Longburn--------	0-1	Cobbly fine sandy loam	SC, SC-SM	A-2, A-4	0-10	15-45	75-90	70-85	50-70	30-45	25-30	5-10
	1-4	Very cobbly fine sandy loam	SC-SM, SC	A-2, A-4	0-25	20-70	45-90	40-85	30-70	20-45	25-30	5-10
	4-17	Very cobbly clay loam, very cobbly sandy clay loam	CL, GC, SC	A-2, A-6	0-25	20-70	45-90	40-85	35-85	15-70	25-35	5-15
	17-27	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
54:												
Longburn--------	0-1	Cobbly fine sandy loam	SC, SC-SM	A-2, A-4	0-10	15-45	75-90	70-85	50-70	30-45	25-30	5-10
	1-4	Very cobbly fine sandy loam	SC-SM, SC	A-2, A-4	0-25	20-70	45-90	40-85	30-70	20-45	25-30	5-10
	4-17	Very cobbly clay loam, very cobbly sandy clay loam	CL, GC, SC	A-2, A-6	0-25	20-70	45-90	40-85	35-85	15-70	25-35	5-15
	17-27	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
55:												
Mack------------	0-13	Fine sandy loam	CL-ML, SC, SC-SM	A-4	0	0	90-100	80-100	70-90	40-55	25-30	5-10
	13-33	Sandy clay loam, clay loam			0	0	90-100	80-100	70-100	35-70	25-35	5-15
	33-60	Sandy loam, sandy clay loam	SC, SC-SM, SM	A-4	0	0	85-100	80-100	50-65	35-50	20-30	NP-10

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
56:												
Mack	0-4	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	90-100	70-85	40-55	20-25	NP-5
	4-14	Fine sandy loam		A-4	0	0	95-100	90-100	70-85	40-55	20-25	NP-5
	14-43	Loam, fine sandy loam	CL-ML, CL	A-4	0	0	95-100	90-100	70-95	40-75	25-30	5-10
	43-56	Loam, fine sandy loam	CL, CL-ML, SC, SC-SM	A-4	0	0	95-100	90-100	70-95	40-75	25-30	5-10
	56-80	Fine sandy loam, loam	CL, CL-ML, SC, SC-SM	A-4	0	0	95-100	90-100	70-95	40-75	25-30	5-10
57:												
Mack	0-4	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	90-100	70-85	40-55	20-25	NP-5
	4-14	Fine sandy loam		A-4	0	0	95-100	90-100	70-85	40-55	20-25	NP-5
	14-43	Loam, fine sandy loam	CL-ML, CL	A-4	0	0	95-100	90-100	70-95	40-75	25-30	5-10
	43-56	Loam, fine sandy loam	CL, CL-ML, SC, SC-SM	A-4	0	0	95-100	90-100	70-95	40-75	25-30	5-10
	56-80	Fine sandy loam, loam	CL, CL-ML, SC, SC-SM	A-4	0	0	95-100	90-100	70-95	40-75	25-30	5-10
58:												
Mariano	0-11	Very fine sandy loam	CL-ML, ML	A-4	0	0-5	95-100	95-100	85-95	50-65	20-25	NP-5
	11-29	Extremely gravelly fine sandy loam, extremely gravelly coarse sandy loam	GM, GW-GM, GW	A-1	0-5	5-35	15-30	10-25	5-20	0-15	20-25	NP-5
	29-51	Extremely gravelly sandy loam	GW-GM, GW	A-1	0-5	5-35	15-30	10-25	5-20	0-10	20-25	NP-5
	51-80	Extremely gravelly sandy loam, extremely cobbly sandy loam	GW, GP, GP-GM, GW-GM	A-1	0-5	5-50	15-60	10-50	5-20	0-20	20-25	NP-5

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
59:												
Mariano---	0-11	Very fine sandy loam	CL-ML, ML	A-4	0-5	0-5	95-100	95-100	85-95	50-65	20-25	NP-5
	11-29	Extremely gravelly fine sandy loam, extremely gravelly coarse sandy loam	GM, GW-GM, GW	A-1	0-5	5-35	15-30	10-25	5-20	0-15	20-25	NP-5
	29-51	Extremely gravelly sandy loam	GW-GM, GW	A-1	0-5	5-35	15-30	10-25	5-20	0-10	20-25	NP-5
	51-80	Extremely gravelly sandy loam, extremely cobbly sandy loam	GW, GP, GP-GM, GW-GM	A-1	0-5	5-50	15-60	10-50	5-20	0-20	20-25	NP-5
60:												
Mariano, Stony--	0-11	Very fine sandy loam	CL-ML, SC-SM, ML, SM	A-4	1-5	5-15	95-100	95-100	70-85	40-55	20-25	NP-5
	11-29	Extremely gravelly fine sandy loam, extremely gravelly coarse sandy loam	GM, GW-GM, GW	A-1	0-5	5-35	15-30	10-25	5-20	0-15	20-25	NP-5
	29-51	Extremely gravelly sandy loam	GW-GM, GW	A-1	0-5	5-35	15-30	10-25	5-20	0-10	20-25	NP-5
	51-80	Extremely gravelly sandy loam, extremely cobbly sandy loam	GW, GP, GP-GM, GW-GM	A-1	0-5	5-50	15-60	10-50	5-20	0-20	20-25	NP-5
61:												
Mikett---	0-8	Clay loam	CL	A-6	0	0-5	95-100	90-100	85-95	65-80	30-35	10-15
	8-60	Clay loam, loam	CL, CL-ML	A-4, A-6	0	0-5	95-100	90-100	75-95	55-80	25-35	5-15

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
62:												
Mikett----------	0-8	Clay loam	CL	A-6	0	0-5	95-100	90-100	85-95	65-80	30-35	10-15
	8-60	Clay loam	CL	A-6	0	0-5	95-100	90-100	85-95	65-80	30-35	10-15
63:												
Mikim-----------	0-3	Clay loam	CL	A-6	0	0-5	95-100	90-100	85-95	65-80	30-35	10-15
	3-15	Clay loam	CL	A-6	0	0-5	95-100	90-100	85-95	65-80	30-35	10-15
	15-32	Stratified fine sandy loam to clay loam	CL, CL-ML	A-4, A-6	0	0-5	95-100	90-100	70-95	50-80	25-35	5-15
	32-60	Clay loam	CL	A-6	0	0-5	95-100	90-100	85-95	65-80	30-35	10-15
64:												
Mikim-----------	0-3	Loam	CL-ML	A-4	0	0-5	95-100	90-100	80-95	55-75	25-30	5-10
	3-15	Clay loam	CL	A-6	0	0-5	95-100	90-100	85-95	65-80	30-35	10-15
	15-32	Stratified fine sandy loam to clay loam	CL, CL-ML	A-4, A-6	0	0-5	95-100	90-100	70-95	50-80	25-35	5-15
	32-60	Clay loam	CL	A-6	0	0-5	95-100	90-100	85-95	65-80	30-35	10-15
65:												
Monierco--------	0-2	Fine sandy loam	ML, CL-ML, SM, SC-SM	A-4, A-2	0-5	0-5	85-100	80-100	50-95	25-75	20-25	NP-5
	2-8	Loam, sandy loam	CL-ML, CL, SC, SM, SC-SM, ML	A-4, A-2	0-5	0-5	85-100	80-100	50-95	25-75	20-30	NP-10
	8-18	Channery loam, channery sandy loam	GC, SC, CL	A-4, A-1, A-2	0-10	0-15	60-80	55-75	35-70	20-55	25-30	5-10
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
66:												
Morefield-------	0-2	Loam	CL-ML	A-4	0	0	100	100	85-100	60-80	25-30	5-10
	2-24	Clay loam, loam	CL, CL-ML	A-6	0	0	100	100	85-100	60-80	25-35	5-15
	24-60	Loam, clay loam	CL, CL-ML	A-6	0	0	100	100	85-100	60-80	25-35	5-15
67:												
Morefield-------	0-2	Loam	CL-ML	A-4	0	0	100	100	85-100	60-80	25-30	5-10
	2-24	Clay loam, loam	CL, CL-ML	A-6	0	0	100	100	85-100	60-80	25-35	5-15
	24-60	Loam, clay loam	CL, CL-ML	A-6	0	0	100	100	85-100	60-80	25-35	5-15

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
68:												
Nataani---------	0-10	Fine sandy loam	ML, SC-SM, SM, CL-ML	A-4	0	0	95-100	95-100	70-85	40-55	20-25	NP-5
	10-23	Sandy loam	SC-SM, SM	A-4, A-2	0	0	95-100	95-100	60-70	30-40	20-25	NP-5
	23-37	Gypsiferous sandy loam, sandy loam	SC-SM, SM	A-4, A-2	0	0	95-100	95-100	60-70	30-40	20-25	NP-5
	37-39	Gypsiferous sandy loam, sandy loam	SC-SM, SM	A-4, A-2	0	0	95-100	95-100	60-70	30-40	20-25	NP-5
	39-49	Unweathered bedrock			---	---	---	---	---	---	---	---
Yogovuci--------	0-2	Very fine sandy loam	ML, SC-SM, CL-ML	A-4	0	0	95-100	95-100	85-95	50-65	20-25	NP-5
	2-6	Loam, very fine sandy loam	CL, CL-ML	A-4	0	0	85-100	80-100	70-95	50-75	20-30	NP-10
	6-13	Clay loam	CL	A-4	0	0	85-100	80-100	70-95	60-80	30-40	5-15
	13-35	Loam, clay loam, gypsiferous clay loam	CL	A-4, A-6	0	0-5	85-100	80-100	70-95	50-80	25-35	5-15
	35-75	Stratified loamy sand to sandy loam to loam to clay loam to clay	GM, GC	A-6, A-4, A-1	0	0-5	85-100	80-100	40-95	15-95	20-50	NP-25
	75-80	Extremely gravelly loamy sand, extremely gravelly sandy loam	GW		0	0-5	15-30	10-25	5-20	0-10	20-25	NP-5

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
69:												
Oagamati--------	0-1	Silty clay loam	ML	A-7, A-6, A-4	0	0	100	95-100	95-100	85-95	30-45	5-15
	1-5	Clay	CL	A-6, A-7	0	0	100	95-100	90-100	75-95	40-50	15-25
	5-23	Clay	CL, CH	A-7	0	0	100	95-100	90-100	75-95	40-60	20-35
	23-35	Very parachannery clay	CL	A-7	0	0	100	95-100	90-100	75-95	40-50	15-25
	35-45	Weathered bedrock			---	---	---	---	---	---	---	---
70:												
Pagayvay--------	0-1	Extremely gravelly coarse sandy loam			0-30	0-30	15-30	10-25	5-15	5-10	20-25	NP-5
	1-60	Stratified very stony loamy coarse sand to extremely cobbly coarse sandy loam to extremely gravelly sandy loam	GP-GM, GW-GM, GC-GM		0-30	0-35	15-30	10-25	5-15	5-10	20-25	NP-5
71:												
Persayo---------	0-2	Loam	CL	A-6	0	0	95-100	90-100	75-85	70-80	30-35	10-15
	2-17	Silty clay loam, clay loam	CL	A-6	0	0	100	90-100	80-90	75-85	35-40	15-20
	17-27	Bedrock			---	---	---	---	---	---	---	---
Cairn-----------	0-2	Channery fine sandy loam	GC-GM, SC-SM	A-2, A-4	0	0-10	65-80	60-75	50-65	25-45	20-25	5-10
	2-9	Loam, clay loam	CL	A-6	0	0-10	80-95	75-90	60-75	50-70	30-40	15-20
	9-19	Very channery loam	GC	A-6	0-10	25-40	50-70	45-65	40-60	35-50	25-30	10-15
	19-46	Gravelly gypsiferous sandy loam	GC	A-6	0-10	25-40	50-70	45-65	40-60	35-50	25-30	10-15
	46-56	Bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
71:												
Patel	0-1	Very channery loam	GC	A-2, A-6	0	0-10	40-55	35-50	30-45	25-40	25-35	10-15
	1-8	Clay, silty clay	CL	A-7	0	0	90-100	85-100	80-95	70-90	40-50	20-25
	8-24	Silty clay loam, clay loam, clay	CL	A-7	0	0	90-100	90-100	85-95	75-90	40-50	20-25
	24-37	Parachannery silty clay loam, extremely parachannery clay loam, clay loam, silty clay loam	CL	A-6, A-7	0	0	90-100	90-100	85-95	75-90	40-50	20-25
	37-47	Weathered bedrock			---	---	---	---	---	---	---	---
72:												
Persayo	0-2	Gravelly loam	CL-ML	A-4	0	0	60-80	55-75	50-70	35-55	20-30	NP-10
	2-11	Silty clay loam, silt loam	ML	A-7-6, A-6, A-4	0	0	100	95-100	95-100	85-95	30-45	5-15
	11-21	Weathered bedrock			---	---	---	---	---	---	---	---
73:												
Persayo	0-2	Silty clay loam	ML	A-7, A-6, A-4	0	0	100	95-100	95-100	85-95	30-50	5-20
	2-11	Extremely parachannery silty clay loam, parachannery silt loam, silt loam, silty clay loam	ML	A-7, A-6, A-4	0	0	100	95-100	95-100	85-95	30-45	5-15
	11-21	Weathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
74:												
Persayo---------	0-2	Silty clay loam	ML	A-7, A-6, A-4	0	0	90-100	85-100	80-100	75-95	30-50	5-20
	2-11	Silty clay loam, silt loam	ML	A-7, A-6, A-4	0	0	95-100	95-100	95-100	85-95	30-45	5-15
	11-21	Weathered bedrock			---	---	---	---	---	---	---	---
Yogovuci--------	0-3	Loam	CL, CL-ML	A-4	0	0	95-100	90-100	85-100	60-75	25-30	5-10
	3-12	Clay loam, loam	CL, CL-ML	A-6, A-4	0	0	95-100	90-100	85-100	60-80	25-35	5-15
	12-17	Clay loam	CL	A-6	0	0	95-100	90-100	90-100	70-80	30-35	10-15
	17-22	Clay loam, gypsiferous clay loam	CL	A-6	0	0	95-100	90-100	90-100	70-80	30-35	10-15
	22-63	Stratified sandy loam to gravelly sandy loam to loam to gravelly loam	SC-SM, CL-ML, ML, SM	A-2, A-4	0	0-5	90-100	80-100	60-95	30-75	20-25	NP-5
	63-80	Stratified gravelly sandy clay loam to gravelly clay loam	CL, SC, GC	A-2, A-6	0	0-5	75-90	65-80	45-70	20-55	30-35	10-15

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
75:												
Picliff	0-2	Silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	85-100	60-95	25-35	5-15
	2-6	Parachannery loam, parachannery silty clay loam	GM, GC, ML, GC-GM, CL, CL-ML	A-4, A-6	0-15	0-10	60-80	55-75	50-75	35-70	20-35	NP-15
	6-15	Extremely parachannery loam, extremely parachannery silty clay loam, extremely parachannery clay loam, extremely parachannery gypsiferous loam, extremely parachannery gypsiferous silty clay loam	GM, GC	A-1, A-2, A-4, A-6	0-25	0-25	35-55	30-50	25-50	20-50	20-40	NP-15
	15-25	Weathered bedrock			---	---	---	---	---	---	---	---
76:												
Pogo	0-2	Loam	CL, CL-ML	A-4	0	0	80-100	75-100	70-95	55-75	25-30	5-10
	2-60	Stratified fine sandy loam to clay loam	CL, SC	A-6	0	0	85-100	80-100	50-100	10-100	20-40	NP-20
77:												
Prater	0-1	Loam	CL, CL-ML	A-4	0-5	0-15	85-100	80-100	70-95	50-75	25-30	5-10
	1-3	Loam, clay loam	CL	A-6	0-10	0-15	85-95	80-95	60-85	45-70	25-35	5-15
	3-9	Clay, clay loam			0-10	0-15	85-95	80-95	65-85	50-85	30-45	10-20
	9-21	Clay loam, clay	CL	A-6, A-7	0-10	0-15	85-95	80-95	75-85	50-85	35-45	15-20
	21-60	Clay, clay loam	CL	A-6, A-7	0-10	5-15	90-100	85-100	75-85	50-85	35-45	15-20

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
77:												
Dolcan----------	0-2	Extremely cobbly fine sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2, A-3, A-4	0-30	30-85	20-80	15-75	10-65	5-40	20-25	NP-5
	2-11	Loam, clay loam, cobbly clay loam	CL	A-6	0-10	0-35	75-100	70-100	65-100	60-80	30-35	10-15
	11-21	Weathered bedrock			---	---	---	---	---	---	---	---
78:												
Pulpit----------	0-5	Loam	CL, CL-ML	A-4	0	0	90-100	90-100	85-95	60-75	25-30	5-10
	5-21	Clay loam, silty clay loam	CL	A-6	0	0	95-100	95-100	95-100	70-95	30-35	10-15
	21-35	Loam, fine sandy loam, clay loam	CL, CL-ML, ML	A-4	0	0	90-100	85-100	60-95	45-80	20-30	NP-10
	35-45	Unweathered bedrock			---	---	---	---	---	---	---	---
79:												
Ramper----------	0-3	Loam	CL, CL-ML	A-4	0	0-5	90-100	85-100	75-90	60-70	20-30	NP-10
	3-60	Stratified sandy loam to clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-5	90-100	85-100	55-95	45-75	25-40	5-15
80:												
Ravola----------	0-9	Clay loam	CL	A-6	0	0-5	95-100	95-100	80-95	65-75	30-35	10-15
	9-60	Stratified loamy sand to clay loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0-5	95-100	80-100	50-75	35-75	25-35	5-15
81:												
Ravola----------	0-2	Silt loam	ML	A-4	0	0-1	95-100	95-100	90-100	70-90	30-35	5-10
	2-47	Stratified silt loam to silty clay loam	ML	A-7, A-6, A-4	0	0	100	100	90-100	70-95	30-45	5-15
	47-80	Stratified loam to silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	60-95	25-35	5-15

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
82:												
Ravola----------	0-10	Very fine sandy loam	CL-ML	A-4	0	0	100	100	100	75-90	20-25	5-10
	10-80	Stratified very fine sandy loam to loam	CL	A-6	0	0	100	100	100	80-95	25-35	10-15
83:												
Redlands--------	0-6	Fine sandy loam	SC-SM, SM	A-4	0	0	95-100	95-100	70-85	40-55	20-25	NP-5
	6-22	Loam, fine sandy loam	CL-ML	A-4	0	0	100	100	85-95	60-75	25-30	5-10
	22-41	Sandy loam, loam	CL-ML, ML, SC-SM, SM	A-4, A-2	0	0	100	100	60-95	30-75	20-25	NP-5
	41-80	Loam	CL-ML, CL	A-4	0	0	100	100	85-95	60-75	25-30	5-10
84:												
Redlands--------	0-6	Fine sandy loam	SC-SM, SM	A-4	0	0	100	95-100	70-85	40-55	20-25	NP-5
	6-22	Loam, fine sandy loam	CL-ML	A-4	0	0	100	100	85-95	60-75	25-30	5-10
	22-41	Sandy loam, loam	CL-ML, ML, SC-SM, SM	A-4, A-2	0	0	100	100	60-95	30-75	20-25	NP-5
	41-80	Loam	CL-ML, CL	A-4	0	0	100	100	85-95	60-75	25-30	5-10
85:												
Rizno----------	0-2	Very fine sandy loam	CL-ML	A-4	0	0	100	100	70-100	50-65	25-30	5-10
	2-9	Loam, fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0-10	85-100	80-100	55-85	35-55	20-25	NP-5
	9-19	Unweathered bedrock			---	---	---	---	---	---	---	---
Gapmesa---------	0-2	Very fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	90-100	90-100	70-95	40-60	20-25	NP-5
	2-21	Gravelly very fine sandy loam, loam	CL, CL-ML	A-4	0	0	70-100	65-100	55-95	50-60	25-30	5-10
	21-28	Gravelly sandy loam	GC-GM, SC-SM, SM, GM	A-2	0-5	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
	28-38	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
86:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
87:												
Rock outcrop----	0-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Farview---------	0-2	Gravelly sandy loam	SC-SM, SM, SP-SM, SW-SM	A-2, A-1	0-5	0-5	60-80	55-75	30-55	10-30	20-25	NP-5
	2-5	Gravelly sandy loam	SC-SM, SM, GC-GM, GM	A-1, A-2	0-5	0-5	60-80	55-75	35-50	20-30	20-25	NP-5
	5-15	Unweathered bedrock			---	---	---	---	---	---	---	---
88:												
Romberg---------	0-2	Very stony loam	CL, CL-ML, GC, SC	A-4	25-70	10-45	40-80	35-70	30-65	25-60	25-30	5-10
	2-20	Very stony clay loam	GC	A-2, A-6	25-70	25-50	50-70	45-65	40-60	30-60	30-35	10-15
	20-60	Very stony clay loam	GC	A-2, A-6	25-70	25-50	50-70	45-65	40-60	30-60	30-35	10-15
Crosscan--------	0-2	Very bouldery sandy clay loam	GC, GC-GM, SC, SC-SM	A-1, A-2	25-65	5-45	40-65	35-60	25-55	15-45	25-35	5-15
	2-18	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2, A-6	0-10	0-20	35-55	30-50	30-50	20-40	25-35	5-15
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
89:												
Romberg---------	0-2	Very stony loam	CL, CL-ML, GC, SC	A-4	25-70	10-45	40-80	35-70	30-65	25-60	25-30	5-10
	2-20	Very stony clay loam	GC	A-6, A-2	25-70	25-50	50-70	45-65	40-60	30-60	30-35	10-15
	20-60	Very stony clay loam	GC	A-2, A-6	25-70	25-50	50-70	45-65	40-60	30-60	30-35	10-15

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
89:												
Crosscan--------	0-2	Very bouldery sandy clay loam	GC, GC-GM, SC, SC-SM	A-1, A-2	25-65	5-45	40-65	35-60	25-55	15-45	25-35	5-15
	2-18	Very gravelly sandy clay loam, very gravelly clay loam, very gravelly loam	GC	A-2, A-6	0-10	0-20	35-55	30-50	30-50	20-40	25-35	5-15
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
90:												
Roubideau-------	0-6	Loam	CL, CL-ML	A-4	0	0	100	100	85-95	60-75	25-30	5-10
	6-36	Silty clay loam, loam, clay loam	CL, CL-ML	A-4, A-6	0	0	80-100	75-100	60-95	40-80	25-35	5-15
	36-38	Channery loam, clay loam, channery clay loam, loam	CL, CL-ML, SC, SC-SM	A-4	0-5	0-20	65-100	60-100	55-95	40-80	25-35	5-15
	38-48	Unweathered bedrock			---	---	---	---	---	---	---	---
91:												
Sharps----------	0-2	Loam	CL, CL-ML	A-4	0	0	85-100	85-100	60-95	60-75	25-30	5-10
	2-12	Clay loam, loam	CL	A-6	0	0	85-100	85-100	60-95	50-80	25-35	5-15
	12-27	Loam, clay loam, silty clay loam	CL, CL-ML	A-4	0	0	85-100	85-100	70-95	50-80	25-30	5-10
	27-32	Clay loam	CL	A-6	0	0-5	90-100	85-100	80-95	65-75	30-35	5-15
	32-42	Weathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
92:												
Sharps, dry-----	0-2	Loam	CL, CL-ML	A-4	0	0	85-100	85-100	60-95	60-75	25-30	5-10
	2-12	Clay loam, loam	CL	A-6	0	0	85-100	85-100	60-95	50-80	25-35	5-15
	12-27	Loam, clay loam, silty clay loam	CL, CL-ML	A-4	0	0	85-100	85-100	70-95	50-80	25-30	5-10
	27-32	Clay loam	CL	A-6	0	0-5	90-100	85-100	80-95	65-75	30-35	5-15
	32-42	Weathered bedrock			---	---	---	---	---	---	---	---
Gapmesa----------	0-2	Very fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	90-100	90-100	70-85	40-55	20-25	NP-5
	2-21	Gravelly very fine sandy loam, loam	CL, CL-ML	A-4	0	0	70-100	65-100	55-95	50-60	25-30	5-10
	21-28	Gravelly sandy loam	GC-GM, SC-SM, SM, GM	A-2	0-5	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
	28-38	Unweathered bedrock			---	---	---	---	---	---	---	---
93:												
Sheek-----------	0-1	Moderately decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-5	Very stony sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	25-70	10-50	45-85	40-80	25-60	15-35	25-30	5-10
	5-60	Very stony clay loam, very stony sandy clay loam, very cobbly loam	CL, GC, SC	A-2, A-6	25-70	10-70	45-85	40-80	35-75	30-70	25-35	5-15

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
93:												
Archuleta-------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-6	Very stony sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	25-70	5-50	45-90	40-85	25-60	15-35	25-30	5-10
	6-18	Stony sandy loam, stony sandy clay loam, stony clay loam	CL, SC-SM, CL-ML	A-4, A-6	10-40	5-20	75-90	70-85	65-85	50-70	25-35	5-15
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
94:												
Sheek-----------	0-1	Moderately decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-5	Very stony sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	25-70	10-50	45-85	40-80	25-60	15-35	25-30	5-10
	5-60	Very stony clay loam, very stony sandy clay loam, very cobbly loam	CL, GC, SC	A-2, A-6	25-70	10-70	45-85	40-80	35-75	30-70	25-35	5-15
Archuleta-------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-6	Very stony sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	25-70	5-50	45-90	40-85	25-60	15-35	25-30	5-10
	6-18	Stony sandy loam, stony sandy clay loam, stony clay loam	CL-ML, SC-SM, CL	A-4, A-6	10-40	5-20	75-90	70-85	65-85	50-70	25-35	5-15
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
95:												
Sheek----------	0-1	Moderately decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-5	Very stony sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	25-70	10-50	45-85	40-80	25-60	15-35	25-30	5-10
	5-60	Very stony clay loam, very stony sandy clay loam, very cobbly loam	CL, GC, SC	A-2, A-6	25-70	10-70	45-85	40-80	35-75	30-70	25-35	5-15
Archuleta-------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-6	Very stony sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	25-70	5-50	45-90	40-85	25-60	15-35	25-30	5-10
	6-18	Stony sandy loam, stony sandy clay loam, stony clay loam	CL, CL-ML, SC-SM	A-4, A-6	10-40	5-20	75-90	70-85	65-85	50-70	25-35	5-15
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
96:												
Sheppard--------	0-7	Fine sand	SM	A-2	0	0	100	100	65-80	20-35	---	NP
	7-60	Loamy sand, loamy fine sand, fine sand	SM	A-2	0	0	100	90-100	70-80	20-50	---	NP
97:												
Sideshow--------	0-3	Silty clay loam	CL, ML	A-6, A-7	0	0	95-100	95-100	95-100	85-95	35-45	10-20
	3-60	Clay, silty clay loam, clay loam	CL	A-6, A-7	0	0	90-100	90-100	90-100	75-95	35-50	15-25

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
98:												
Sideshow--------	0-3	Silty clay loam	CL, ML	A-6, A-7	0	0	95-100	95-100	95-100	85-95	35-45	10-20
	3-60	Clay, silty clay loam, clay loam	CL	A-6, A-7	0	0	90-100	90-100	90-100	75-95	35-50	15-25
99:												
Simpatico-------	0-12	Loam	CL, CL-ML	A-4	0	0	95-100	90-100	80-95	55-75	25-30	5-10
	12-45	Silty clay loam, clay loam	CL	A-6	0	0	95-100	90-100	85-100	70-100	30-35	10-15
	45-60	Very cobbly loam, cobbly loam, loam	CL, CL-ML, SC, SC-SM	A-4	0-5	15-60	80-100	70-100	60-85	45-75	25-30	5-10
100:												
Snapill---------	0-3	Very fine sandy loam	CL-ML	A-4	0	0	100	100	90-100	70-85	15-20	5-10
	3-13	Loam, sandy clay loam	CL	A-6	0	0	100	100	95-100	75-90	20-30	10-15
	13-38	Loam, sandy clay loam, very fine sandy loam	CL	A-6	0	0	100	100	95-100	75-90	20-30	10-15
	38-53	Parachannery loam, loam, fine sandy loam, sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	100	100	65-85	40-65	15-30	5-15
	53-63	Weathered bedrock			---	---	---	---	---	---	---	---
101:												
Stephouse-------	0-1	Gravelly fine sandy loam			0-5	0-5	60-80	55-75	40-65	25-40	20-25	NP-5
	1-12	Gravelly fine sandy loam, very gravelly fine sandy loam, loam			0-5	0-5	35-80	30-75	20-65	10-40	20-25	NP-5
	12-22	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
101:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
102:												
Strych----------	0-3	Extremely flaggy very fine sandy loam	GC-GM	A-2	25-45	30-40	40-60	30-50	25-40	20-35	20-25	5-10
	3-15	Very flaggy very fine sandy loam	GC-GM, SC-SM	A-4	10-15	25-40	55-75	50-70	45-60	35-50	20-25	5-10
	15-47	Very stony very fine sandy loam, very stony fine sandy loam	GC-GM, SC-SM	A-2, A-4	25-40	15-25	60-80	55-75	50-70	30-50	20-25	5-10
	47-64	Very stony very fine sandy loam, very stony fine sandy loam, very stony loamy fine sand	GC-GM, GM, SC-SM, SM	A-2, A-4	25-40	15-25	60-80	55-75	50-70	20-40	15-25	NP-10
Eagleye---------	0-2	Very channery clay loam	GC	A-6, A-7	0-25	10-25	50-70	45-65	35-60	35-50	35-45	15-20
	2-8	Parachannery silty clay loam, silty clay	CH, CL	A-7	0	0	100	100	95-100	85-95	40-55	20-30
	8-18	Extremely parachannery silty clay loam, very parachannery silty clay	CH, CL	A-7	0	0	100	100	95-100	85-95	40-55	20-30
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-80	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
103:												
Tocito----------	0-2	Very fine sandy loam	CL-ML	A-4	0	0	100	100	95-100	70-80	20-25	5-10
	2-16	Clay loam, loam	CL	A-6	0	0	100	100	85-95	75-85	25-35	10-15
	16-80	Stratified very fine sandy loam to silt loam	CL	A-6	0	0	100	100	100	80-95	25-35	10-15
Gullied land----	0-3	Silt loam	CL	A-6	0	0	100	100	95-100	80-90	25-35	10-15
	3-80	Stratified very fine sandy loam to silt loam	CL	A-6	0	0	100	100	90-100	75-90	25-35	10-15
104:												
Tohona----------	0-1	Very gravelly sandy clay loam	GC	A-2	0	0-15	40-60	35-55	30-50	20-35	30-40	10-15
	1-11	Clay	CH, CL	A-7	0	0-10	90-95	85-90	75-80	55-70	45-60	20-30
	11-33	Gypsiferous clay	CH	A-7	0	0	90-95	85-90	75-80	55-70	45-60	20-30
	33-43	Weathered bedrock			---	---	---	---	---	---	---	---
Kimnoli---------	0-4	Loamy fine sand	SM	A-2	0	0	100	100	90-100	20-35	0-15	NP
	4-9	Fine sandy loam, sandy clay loam	CL, SC	A-6	0	0	90-95	85-90	75-80	45-60	25-30	10-15
	9-19	Unweathered bedrock			---	---	---	---	---	---	---	---
Claysprings-----	0-2	Extremely gravelly sandy clay loam	GC	A-2	25-40	10-15	25-45	20-40	15-30	10-25	30-35	10-15
	2-5	Clay	CH, CL	A-7	0	0	90-95	85-90	75-85	65-80	45-60	20-30
	5-16	Silty clay, clay	CH, CL	A-7	0	0	100	100	90-100	75-90	45-60	20-30
	16-26	Weathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
105:												
Torriorthents---	0-4	Extremely stony sandy loam	GC-GM, GM, SC-SM, SM	A-2	30-80	35-70	45-90	40-85	25-55	5-30	20-25	NP-5
	4-14	Very stony silty clay loam	GM, ML, SM	A-4, A-6	25-65	10-50	45-85	40-80	40-80	35-75	30-45	5-15
	14-24	Weathered bedrock			---	---	---	---	---	---	---	---
106:												
Torriorthents---	0-4	Silty clay loam	CL, ML	A-6, A-7	0	0	95-100	95-100	95-100	85-95	35-45	10-20
	4-14	Silty clay loam, clay loam, clay	CL	A-6, A-7	0	0	90-100	90-100	90-100	75-95	35-50	15-25
	14-24	Weathered bedrock			---	---	---	---	---	---	---	---
Badland---	0-60	Weathered bedrock			---	---	---	---	---	---	---	---
107:												
Towaoc---	0-5	Very stony loam	GC-GM	A-1, A-2, A-4	0-15	5-25	35-55	30-50	20-45	10-40	20-25	NP-5
	5-12	Very gravelly loam, very gravelly sandy loam	GC-GM	A-1, A-2, A-4	0-15	5-25	35-55	30-50	20-45	10-40	20-25	NP-5
	12-80	Very gravelly loam, very gravelly sandy loam	GC, GC-GM, GW-GC	A-1, A-2, A-4	0-15	0-25	35-55	30-50	20-45	10-40	25-30	5-10
Kwiavu---	0-9	Loam	CL-ML, CL	A-4	0-40	0-30	75-100	70-100	60-95	45-75	25-30	5-10
	9-15	Stony loam	CL-ML, CL	A-4	0-40	0-30	75-100	70-95	60-95	45-75	25-30	5-10
	15-60	Stony clay loam, loam, stony loam	CL-ML, CL	A-4, A-6	0-40	0-30	75-95	70-90	60-80	45-70	25-35	5-15

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
108:												
Towaoc----------	0-5	Very stony loam	GC-GM	A-1, A-2, A-4	0-15	5-25	35-55	30-50	20-45	10-40	20-25	NP-5
	5-12	Very gravelly loam, very gravelly sandy loam	GC-GM	A-1, A-2, A-4	0-15	5-25	35-55	30-50	20-45	10-40	20-25	NP-5
	12-80	Very gravelly loam, very gravelly sandy loam	GC, GC-GM, GW-GC	A-1, A-2, A-4	0-25	0-25	35-55	30-50	20-45	10-40	25-30	5-10
109:												
Tragmon---------	0-5	Sandy loam	SC, SC-SM	A-2, A-4	0-5	0-10	85-100	80-100	50-70	25-40	25-30	5-10
	5-11	Loam	CL, CL-ML	A-4	0-5	0-15	85-100	75-100	70-95	50-75	25-30	5-10
	11-40	Loam, sandy clay loam, clay loam	CL, CL-ML	A-4	0-5	0-15	85-100	75-100	70-95	50-75	25-35	5-15
	40-60	Loam, sandy clay loam, clay loam	CL, CL-ML	A-4	0-5	0-15	85-100	75-100	70-95	50-75	25-30	5-10
Sheek-----------	0-4	Cobbly loam	CL, CL-ML, SC, SC-SM	A-4	0-10	15-45	75-85	70-80	60-80	45-65	25-30	5-10
	4-16	Very cobbly clay loam, very stony clay loam	CL, GC, SC	A-2, A-6	10-25	20-60	45-85	40-80	35-75	30-70	30-35	10-15
	16-42	Very gravelly clay loam, very stony clay loam, very cobbly clay loam	CL, GC, SC	A-2, A-6	10-40	20-50	45-90	40-85	35-80	30-70	30-35	10-15
	42-60	Very stony clay loam, very cobbly clay loam	CL, GC, SC	A-2, A-6	25-60	25-40	45-90	40-85	35-85	30-70	30-35	10-15
110:												
Tupuyci---------	0-2	Fine sandy loam	SC-SM	A-1	0-5	0-5	60-90	55-85	30-50	5-10	20-25	NP-5
	2-80	Stratified loamy sand to extremely cobbly sandy loam	GW, GP-GM, GW-GM, GP	A-3, A-2, A-1	0-30	30-85	20-80	15-75	10-55	0-30	20-25	NP-5

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
110:												
Ives----------	0-1	Sandy loam	SM, SC-SM	A-2, A-4	0-1	0-5	95-100	95-100	60-70	30-40	20-25	NP-5
	1-80	Stratified loamy sand to sandy loam	SM, SC-SM	A-4, A-2	0-1	0-5	95-100	95-100	50-75	15-40	20-25	NP-5
111:												
Typic Torriorthents--	0-3	Extremely stony sandy loam	GC-GM, GM, SC-SM, SM	A-2	30-85	35-70	45-90	40-85	25-55	15-30	20-25	NP-5
	3-16	Stony sandy loam, very stony silty clay loam, very stony clay loam	GM, ML, SM	A-6	15-70	10-50	40-85	35-80	35-80	30-75	30-45	5-15
	16-26	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
112:												
Ustic Torrifluvents--	0-3	Loamy sand	SC-SM, SM	A-2	0	0	95-100	90-95	50-75	15-30	15-25	NP-5
	3-11	Fine sandy loam	CL-ML, ML, SC-SM	A-4	0	0	95-100	95-100	65-85	40-55	20-25	NP-5
	11-60	Stratified loamy sand to very gravelly sandy loam, very gravelly sandy loam	GM, GP-GM, GW-GM, SM, SC-SM	A-1, A-4, A-2	0	0-10	40-100	35-95	20-70	5-40	20-25	NP-5
113:												
Ustic Torriorthents--	0-7	Variable			0-5	0-20	---	---	---	---	---	---
	7-60	Clay loam, sandy clay loam, sandy loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0-5	0-15	80-95	75-90	55-85	30-75	20-35	5-20
Gullied land----	0-60	Variable			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
114:												
Uzacol----------	0-5	Clay loam	CL	A-6	0-1	0-1	85-95	75-95	70-85	70-80	30-35	10-15
	5-45	Clay, clay loam	CH, CL	A-6, A-7	0-5	0-5	85-100	80-100	75-95	70-90	40-65	20-40
	45-59	Clay, clay loam	CL	A-6, A-7	0-5	0-5	85-100	80-100	75-100	70-95	35-60	15-35
	59-69	Weathered bedrock			---	---	---	---	---	---	---	---
Zwicker---------	0-1	Stony clay loam	CL	A-6	10-20	5-15	75-90	70-85	65-85	50-70	30-40	10-20
	1-4	Clay loam	CL	A-6	0-5	0-5	85-100	80-100	75-95	60-75	30-40	10-20
	4-32	Clay, clay loam	CL	A-6, A-7	0-5	0-5	85-100	80-100	75-95	60-90	35-50	15-25
	32-42	Weathered bedrock			---	---	---	---	---	---	---	---
Claysprings-----	0-3	Very stony clay loam	CL	A-6	25-50	5-15	80-95	70-85	65-85	50-65	30-35	10-15
	3-18	Clay, clay loam	CH, CL	A-7	0-5	0-5	85-100	85-100	80-100	70-95	40-60	15-30
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
115:												
Uzona-----------	0-2	Silt loam	ML	A-4	0	0	95-100	95-100	90-100	70-90	30-35	5-10
	2-22	Clay	CL	A-7	0	0	100	100	90-100	75-95	40-50	15-25
	22-80	Silty clay, clay	CH, CL	A-7	0	0	100	100	90-100	75-95	40-65	15-40
116:												
Vessilla--------	0-3	Channery fine sandy loam	SC-SM	A-2, A-4	0-10	0-15	80-90	75-85	60-75	25-40	15-20	5-10
	3-8	Parachannery fine sandy loam, fine sandy loam, channery fine sandy loam	SC-SM	A-2, A-4	0	0-10	80-95	75-90	65-80	30-45	15-20	5-10
	8-18	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-80	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
117:												
Vosburg---------	0-15	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	95-100	65-85	40-55	20-25	NP-5
	15-60	Sandy clay loam, clay loam, loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	75-95	50-75	25-35	5-15
118:												
Water-----------	0-60	Water			---	---	---	---	---	---	---	---
119:												
Water-----------	---	---	---	---	---	---	---	---	---	---	---	---
Riverwash-------	0-6	Extremely gravelly sand	GW	A-1	0	0-25	10-40	10-35	5-25	0-5	0-15	NP
	6-60	Stratified extremely gravelly coarse sand to gravelly sand	GW, SW	A-1	0	0-25	25-55	25-50	10-30	0-5	0-15	NP
120:												
Wauquie---------	0-2	Very stony loam	GC, GC-GM, SC, SC-SM	A-2, A-4	25-60	5-30	45-90	40-85	35-80	25-60	25-30	5-10
	2-20	Very stony sandy loam, very stony loam	CL, GC-GM, SC, SC-SM	A-1, A-2, A-4	25-70	5-50	45-90	40-85	25-80	15-65	25-30	5-10
	20-60	Very stony loam	CL, GC-GM, SC, SC-SM	A-2, A-4	25-70	5-40	45-90	40-85	35-80	25-65	25-35	5-10
121:												
Wauquie---------	0-2	Stony fine sandy loam	SC, SC-SM	A-2, A-4	10-45	5-30	75-90	70-85	50-70	30-45	25-30	5-10
	2-6	Very cobbly sandy loam, very cobbly loam	CL, GC-GM, SC, SC-SM	A-2, A-4	0-10	20-50	45-90	40-85	35-80	25-65	25-30	5-10
	6-22	Very cobbly loam, very cobbly clay loam			5-25	20-50	45-90	40-85	35-80	25-65	25-35	5-15
	22-60	Very stony clay loam, very cobbly loam	CL, GC-GM, SC, SC-SM	A-2, A-4, A-6	25-70	5-40	45-90	40-85	35-85	25-70	25-35	5-15

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
121:												
Dolcan----------	0-2	Extremely cobbly fine sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2, A-3, A-4	0-30	30-85	20-80	15-75	10-65	5-40	20-25	NP-5
	2-11	Loam, clay loam, cobbly clay loam	CL	A-6	0-10	0-35	75-100	70-100	65-100	60-80	30-35	10-15
	11-21	Weathered bedrock			---	---	---	---	---	---	---	---
122:												
Wauquie---------	0-2	Stony fine sandy loam	SC, SC-SM	A-2, A-4	10-45	5-30	75-90	70-85	50-70	30-45	25-30	5-10
	2-6	Very cobbly sandy loam, very cobbly loam	CL, GC-GM, SC, SC-SM	A-2, A-4	0-10	20-50	45-90	40-85	35-80	25-65	25-30	5-10
	6-22	Very cobbly loam, very cobbly clay loam			5-25	20-50	45-90	40-85	35-80	25-65	25-35	5-15
	22-60	Very stony clay loam, very cobbly loam	CL, GC-GM, SC, SC-SM	A-2, A-4, A-6	25-70	5-40	45-90	40-85	35-85	25-70	25-35	5-15
Dolcan----------	0-2	Extremely cobbly fine sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2, A-3, A-4	0-30	30-85	20-80	15-75	10-65	5-40	20-25	NP-5
	2-11	Loam, clay loam, cobbly clay loam	CL	A-6	0-10	0-35	75-100	70-100	65-100	60-80	30-35	10-15
	11-21	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
123:												
Wetherill-------	0-3	Very fine sandy loam	CL-ML	A-4	0	0	100	100	90-100	65-80	20-25	5-10
	3-18	Loam, clay loam, sandy clay loam	CL	A-6	0	0	100	100	95-100	80-95	25-35	10-15
	18-42	Loam, clay loam, sandy clay loam	CL	A-6	0	0	100	100	95-100	80-95	25-35	10-15
	42-70	Loam, sandy clay loam, very fine sandy loam	CL	A-6	0	0	100	100	90-100	75-90	25-30	10-15
Atlatl----------	0-2	Gravelly fine sandy loam	SC-SM	A-2	0	0	65-80	60-75	55-70	20-35	20-25	5-10
	2-17	Fine sandy loam, loam	CL-ML, SC-SM	A-4	0	0-10	90-100	85-100	80-95	40-60	25-30	5-10
	17-30	Fine sandy loam, loam	CL-ML, SC-SM	A-4	0	0-10	90-100	85-100	80-95	35-55	20-25	5-10
	30-40	Unweathered bedrock			---	---	---	---	---	---	---	---
124:												
Wetherill-------	0-9	Silt loam	ML	A-4	0	0	95-100	95-100	90-100	70-90	30-35	5-10
	9-21	Silt loam	ML	A-4	0	0	95-100	95-100	90-100	70-90	30-35	5-10
	21-43	Silt loam	ML	A-4	0	0	95-100	95-100	90-100	70-90	30-35	5-10
	43-80	Silt loam	ML	A-4	0	0	95-100	95-100	90-100	70-90	25-35	5-10
Kucu------------	0-2	Loam	CL, CL-ML	A-4	0-5	0-5	85-100	80-100	70-95	50-75	25-30	5-10
	2-15	Clay loam, silt loam, loam	CL-ML, CL	A-4	0-5	0-5	85-100	80-100	70-95	50-80	25-30	5-10
	15-38	Very gravelly sandy loam	GC-GM, GM, GW-GM	A-4, A-2, A-1	0-10	5-25	35-55	30-50	20-50	10-40	20-25	NP-5
	38-80	Extremely gravelly sandy loam	GW-GM, GW	A-1	0-5	5-35	15-30	10-25	5-20	0-10	20-25	NP-5

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
125:												
Wetherill-------	0-3	Loam	CL-ML	A-4	0	0	100	100	85-95	60-75	25-30	5-10
	3-7	Loam, clay loam	CL-ML, CL	A-6, A-4	0	0	100	100	85-95	60-75	25-35	5-15
	7-48	Loam, clay loam, sandy clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	60-80	25-35	5-15
	48-60	Sandy clay loam, loam	CL, CL-ML	A-4	0	0	100	100	85-100	65-75	25-30	5-10
126:												
Wetherill-------	0-9	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	30-35	5-10
	9-21	Silt loam, loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	21-43	Silt loam, loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	43-80	Silt loam, loam, clay loam	CL-ML, CL	A-4	0	0	100	100	90-100	70-90	25-35	5-15
127:												
Wetherill-------	0-9	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	30-35	5-10
	9-21	Silt loam, loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	21-43	Silt loam, loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	43-80	Silt loam, loam, clay loam	CL-ML, CL	A-4	0	0	100	100	90-100	70-90	25-35	5-15

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
128:												
Wetherill-------	0-9	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	30-35	5-10
	9-21	Silt loam, loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	21-43	Silt loam, loam, clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	70-90	25-35	5-15
	43-80	Silt loam, loam, clay loam	CL-ML, CL	A-4	0	0	100	100	90-100	70-90	25-35	5-15
129:												
Wetherill-------	0-9	Silt loam	ML	A-4	0	0	95-100	95-100	90-100	70-90	30-35	5-10
	9-21	Silt loam	ML	A-4	0	0	95-100	95-100	90-100	70-90	30-35	5-10
	21-43	Silt loam	ML	A-4	0	0	95-100	95-100	90-100	70-90	30-35	5-10
	43-80	Silt loam	ML	A-4	0	0	95-100	95-100	90-100	70-90	25-35	5-10
Wetoe-----------	0-7	Very cobbly silt loam	GM, SM, ML	A-2-4, A-4	0-25	20-70	45-90	40-85	35-85	30-75	25-30	NP-5
	7-40	Very cobbly loam	GC-GM, GC, SC, SC-SM, CL, CL-ML	A-2-4, A-2-6, A-4, A-6	0-25	20-70	45-90	40-85	35-85	25-70	25-35	5-15
	40-60	Very cobbly coarse sandy loam	GW-GM, GP-GM, GM, SW-SM, SP-SM, SM, SC-SM	A-1-a, A-1-b, A-2-4	0-25	20-70	45-90	40-85	20-55	10-30	20-25	NP-5
130:												
Wetoe-----------	0-8	Very gravelly loam	GC-GM	A-1, A-2, A-4	0-25	0-25	35-55	30-50	20-45	10-40	20-25	NP-5
	8-60	Very gravelly loam, very gravelly sandy loam	GC, GC-GM, GW-GC	A-1	0-25	0-25	35-50	30-50	20-50	10-40	25-30	5-10
Nees------------	0-3	Extremely gravelly loam	GC, GC-GM, GW-GC	A-1, A-2	0-30	10-35	15-30	10-25	5-25	5-20	25-30	5-10
	3-11	Extremely gravelly loam	GC, GC-GM, GW-GC	A-1	0-30	10-35	15-30	10-25	5-25	5-20	25-30	5-10
	11-15	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
130:												
Rock outcrop----	0-80	Unweathered bedrock			---	---	---	---	---	---	---	---
131:												
Yarts----------	0-9	Fine sandy loam	ML, SC-SM, SM, CL-ML	A-4	0	0	95-100	90-100	65-80	45-55	20-25	NP-5
	9-13	Sandy loam, fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-90	30-55	20-25	NP-5
	13-60	Sandy loam	SC-SM, SM	A-2, A-4	0	0	95-100	90-100	55-70	30-40	20-30	NP-10
132:												
Yogovuci--------	0-2	Very fine sandy loam	ML, SC-SM, CL-ML	A-4	0	0	95-100	95-100	85-95	50-65	20-25	NP-5
	2-6	Loam, very fine sandy loam	CL, CL-ML	A-4	0	0	85-100	80-100	70-95	50-75	20-30	NP-10
	6-13	Clay loam	CL	A-4	0	0	85-100	80-100	70-95	60-80	30-40	5-15
	13-35	Loam, clay loam, gypsiferous clay loam	CL	A-4, A-6	0	0-5	85-100	80-100	70-95	50-80	25-35	5-15
	35-75	Stratified loamy sand to sandy loam to loam to clay loam to clay	GM, GC	A-6, A-4, A-1	0	0-5	85-100	80-100	40-95	15-95	20-50	NP-25
	75-80	Extremely gravelly loamy sand, extremely gravelly sandy loam	GW		0	0-5	15-30	10-25	5-20	0-10	20-25	NP-5

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
132:												
Taqoci----------	0-9	Very fine sandy loam	ML, CL-ML	A-4	0	0	90-100	90-100	80-95	50-65	20-25	NP-5
	9-26	Sandy clay loam, clay loam, loam	CL-ML, CL	A-6, A-4	0	0	85-100	80-100	70-95	50-80	25-30	5-15
	26-37	Loam, very fine sandy loam	ML, CL-ML	A-4	0	0	85-100	80-100	70-95	60-75	20-30	NP-10
	37-80	Stratified coarse sandy loam to sandy clay loam to very gravelly loam	GW-GM, SM, SC-SM, GM	A-1, A-4, A-2	0	0-5	35-95	30-95	15-50	10-40	20-30	NP-10
133:												
Zigzag----------	0-1	Very channery clay loam	GC	A-2	0-5	0-10	35-45	30-40	30-40	20-30	30-40	10-20
	1-5	Clay loam			0-5	0-5	85-100	80-100	75-100	60-80	30-40	10-20
	5-19	Clay loam, clay	CL	A-7	0-5	0-5	90-100	85-100	75-100	70-95	40-60	15-35
	19-29	Weathered bedrock			---	---	---	---	---	---	---	---
Sideshow--------	0-3	Silty clay loam	CL, ML	A-6, A-7	0	0	95-100	95-100	95-100	85-95	35-45	10-20
	3-60	Silty clay loam, clay loam, clay	CL	A-6, A-7	0	0	90-100	90-100	90-100	75-95	35-50	15-25
134:												
Zyme----------	0-2	Gravelly clay loam	CL, GC, SC	A-6	0-5	0-10	65-75	60-70	45-65	40-60	30-40	10-20
	2-12	Clay loam, clay	CL	A-6, A-7	0-5	0-5	90-100	85-100	75-100	70-95	35-45	15-20
	12-22	Weathered bedrock			---	---	---	---	---	---	---	---

Table 12.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
135:												
Zyme----------	0-4	Clay loam	CL	A-6	0-1	0-1	85-95	75-95	70-85	70-80	30-40	10-20
	4-18	Very parachannery clay loam, parachannery clay loam, clay loam, clay	CL	A-6, A-7	0-5	0-5	90-100	85-100	75-100	70-95	35-45	15-20
	18-28	Weathered bedrock			---	---	---	---	---	---	---	---
Katzine, dry----	0-2	Very gravelly sandy loam	GC, GC-GM, GW-GC	A-4, A-1, A-2	0-25	0-25	35-55	30-50	20-50	10-40	25-30	5-10
	2-12	Very gravelly sandy loam, very gravelly loam	GC, GC-GM	A-1, A-2, A-4	0-25	0-25	35-55	30-50	25-50	20-40	25-30	5-10
	12-80	Very gravelly sandy loam, very gravelly loam	GC-GM	A-1	0-30	0-35	15-30	10-25	5-25	0-20	20-25	NP-5
136:												
Zyme----------	0-2	Very channery clay loam	GC	A-2	0-5	0-10	35-45	30-40	25-35	20-30	30-40	10-20
	2-12	Clay loam, clay	CL	A-6, A-7	0-5	0-5	90-100	85-100	75-100	70-95	35-45	15-20
	12-22	Weathered bedrock			---	---	---	---	---	---	---	---

Table 13.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
1:														
Arabrab	0-4	5-15	1.45-1.55	6-20	0.06-0.08	0.0-2.9	0.5-2.0	.20	.20	1	2	134	6s	---
	4-13	18-35	1.25-1.40	0.6-2	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28					
	13-16	18-35	1.30-1.40	0.6-2	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28					
	16-26	---	---	0.00-0.2	---	---	---	---	---					
Longburn	0-1	10-20	1.35-1.50	0.2-2	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28	1	3	86	6s	---
	1-4	10-20	1.35-1.50	0.2-2	0.07-0.09	0.0-2.9	1.0-2.0	.10	.28					
	4-17	20-35	1.25-1.40	0.2-0.6	0.09-0.11	0.0-2.9	0.5-1.0	.10	.24					
	17-27	---	---	0.00-0.2	---	---	---	---	---					
2:														
Awitava	0-1	10-20	1.35-1.50	0.6-6	0.04-0.05	0.0-3.0	1.0-2.0	.05	.28	2	8	0	6s	---
	1-4	10-20	1.35-1.50	0.6-6	0.07-0.13	0.0-3.0	1.0-2.0	.15	.24					
	4-10	10-20	1.25-1.50	0.6-6	0.05-0.09	0.0-3.0	0.5-1.0	.10	.28					
	10-21	10-20	1.25-1.50	0.00-0.01	0.00-0.01	0.0-0.0	0.0-0.5	.10	.28					
	21-80	10-20	1.25-1.50	0.6-6	0.03-0.05	0.0-3.0	0.0-0.5	.05	.28					
3:														
Badland	0-60	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
Rock outcrop	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
4:														
Barx	0-3	10-20	1.25-1.40	2-6	0.14-0.18	0.0-2.9	1.0-2.0	.28	.28	5	4L	86	4c	---
	3-31	18-35	1.25-1.40	0.6-2	0.14-0.18	3.0-5.9	0.0-1.0	.37	.37					
	31-60	18-30	1.40-1.50	0.6-2	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43					
Gapmesa	0-2	8-15	1.35-1.50	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	2	3	86	4c	---
	2-21	18-27	1.25-1.40	0.6-2	0.10-0.13	0.0-2.9	0.5-1.0	.24	.24					
	21-28	10-20	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.0-0.5	.20	.32					
	28-38	---	---	0.00-0.2	---	---	---	---	---					
5:														
Barx	0-3	10-20	1.25-1.40	2-6	0.14-0.18	0.0-2.9	1.0-2.0	.28	.28	5	4L	86	4e	---
	3-31	18-35	1.25-1.40	0.6-2	0.14-0.18	3.0-5.9	0.0-1.0	.37	.37					
	31-80	18-30	1.40-1.50	0.6-2	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
6:														
Barx	0-3	10-18	1.30-1.40	2-6	0.14-0.16	0.0-2.9	1.0-3.0	.43	.43	5	3	86	4c	---
	3-9	10-18	1.40-1.50	2-6	0.11-0.13	0.0-2.9	0.0-1.0	.28	.28					
	9-23	27-35	1.30-1.40	0.6-2	0.17-0.18	3.0-5.9	0.0-1.0	.28	.28					
	23-36	27-35	1.40-1.50	0.6-2	0.17-0.18	3.0-5.9	0.0-1.0	.28	.28					
	36-55	20-27	1.40-1.50	0.6-2	0.17-0.18	0.0-2.9	0.0-1.0	.28	.28					
	55-60	20-27	1.40-1.50	0.6-2	0.17-0.18	0.0-2.9	0.0-1.0	.28	.28					
7:														
Battlerock	0-10	27-35	1.25-1.35	0.2-0.6	0.17-0.20	3.0-5.9	0.5-1.0	.24	.24	5	4L	86	6c	3e
	10-60	18-35	1.25-1.40	0.2-0.6	0.15-0.18	3.0-5.9	0.5-1.0	.32	.32					
8:														
Battlerock, saline-sodic	0-1	10-27	1.15-1.30	0.6-6	0.12-0.16	0.0-2.9	1.0-1.5	.37	.37	5	4L	86	6s	---
	1-14	18-40	1.15-1.40	0.06-6	0.10-0.14	3.0-5.9	0.5-1.0	.32	.32					
	14-80	8-30	1.25-1.30	0.6-6	0.10-0.14	0.0-2.9	0.5-1.0	.43	.43					
9:														
Battlerock, slightly saline-sodic	0-3	27-40	1.15-1.30	0.06-0.6	0.17-0.20	3.0-5.9	1.0-1.5	.28	.28	5	4L	86	6c	2e
	3-6	27-35	1.25-1.40	0.2-0.6	0.17-0.21	3.0-5.9	0.5-1.0	.24	.24					
	6-80	10-35	1.15-1.40	0.2-6	0.14-0.21	0.0-2.9	0.5-1.0	.37	.37					
10:														
Bebeevar	0-4	2-8	1.55-1.65	6-20	0.05-0.08	0.0-2.9	0.2-0.5	.17	.17	5	2	134	4s	---
	4-70	2-10	1.40-1.50	2-6	0.04-0.07	0.0-2.9	0.2-0.5	.10	.17					
Walrees	0-4	15-18	1.35-1.45	2-6	0.09-0.11	0.0-2.9	1.0-2.0	.28	.28	5	3	86	4w	---
	4-30	8-27	1.30-1.40	0.2-0.6	0.10-0.13	3.0-5.9	0.5-1.0	.28	.28					
	30-62	0-5	1.35-1.45	20-20	0.02-0.04	0.0-2.9	0.2-0.5	.05	.10					
11:														
Benally	0-3	10-18	1.50-1.60	2-6	0.12-0.14	0.0-2.9	0.3-0.5	.28	.28	5	3	86	7s	---
	3-14	18-27	1.45-1.55	0.6-2	0.09-0.13	0.0-2.9	0.2-0.4	.28	.28					
	14-41	27-35	1.45-1.55	0.2-0.6	0.04-0.05	3.0-5.9	0.2-0.4	.32	.32					
	41-65	35-40	1.50-1.60	0.06-0.2	0.04-0.05	3.0-5.9	0.2-0.4	.37	.37					
12:														
Blackston	0-3	10-18	1.50-1.60	2-6	0.07-0.09	0.0-2.9	0.4-0.6	.15	.24	5	5	56	7c	4e
	3-9	10-18	1.50-1.60	2-6	0.11-0.13	0.0-2.9	0.3-0.5	.24	.24					
	9-15	20-35	1.50-1.60	0.6-2	0.10-0.12	3.0-5.9	0.3-0.5	.15	.32					
	15-35	10-18	1.45-1.55	6-20	0.03-0.06	0.0-2.9	0.2-0.4	.05	.20					
	35-70	0-8	1.45-1.55	20-20	0.01-0.03	0.0-2.9	0.2-0.4	.02	.15					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
12:														
Camac	0-3	10-18	1.40-1.50	2-6	0.06-0.08	0.0-2.9	0.4-0.6	.10	.28	2	6	48	7e	---
	3-17	15-27	1.40-1.50	0.6-2	0.09-0.13	0.0-2.9	0.3-0.5	.15	.32					
	17-31	18-35	1.45-1.55	0.2-0.6	0.12-0.16	3.0-5.9	0.2-0.4	.32	.32					
	31-41	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
13:														
Bluechief	0-6	5-10	1.35-1.50	2-6	0.13-0.15	0.0-2.9	1.0-1.5	.24	.24	2	3	86	6c	4s
	6-23	10-15	1.35-1.50	2-6	0.10-0.15	0.0-2.9	0.5-1.0	.28	.28					
	23-29	5-15	1.45-1.60	2-6	0.07-0.12	0.0-2.9	0.0-0.5	.28	.28					
	29-39	---	---	0.00-0.2	---	---	---	---	---					
14:														
Bluechief	0-6	5-10	1.35-1.50	2-6	0.13-0.15	0.0-2.9	1.0-1.5	.24	.24	2	3	86	6c	4s
	6-23	10-15	1.35-1.50	2-6	0.10-0.15	0.0-2.9	0.5-1.0	.28	.28					
	23-29	5-15	1.45-1.60	2-6	0.07-0.12	0.0-2.9	0.0-0.5	.28	.28					
	29-39	---	---	0.00-0.2	---	---	---	---	---					
15:														
Bluechief	0-6	5-10	1.35-1.50	2-6	0.13-0.15	0.0-2.9	1.0-1.5	.24	.24	2	3	86	6c	4e
	6-23	10-15	1.35-1.50	2-6	0.10-0.15	0.0-2.9	0.5-1.0	.28	.28					
	23-29	5-15	1.45-1.60	2-6	0.07-0.12	0.0-2.9	0.0-0.5	.28	.28					
	29-39	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
16:														
Cahona	0-7	10-20	1.25-1.40	0.6-2	0.14-0.16	0.0-2.9	0.5-2.0	.37	.37	4	5	56	4e	4e
	7-30	18-35	1.40-1.55	0.2-0.6	0.18-0.21	3.0-5.9	0.5-1.0	.28	.28					
	30-45	18-35	1.40-1.55	0.2-0.6	0.18-0.21	3.0-5.9	0.5-1.0	.28	.28					
	45-60	18-27	1.25-1.40	0.6-2	0.16-0.19	0.0-2.9	0.0-0.5	.43	.43					
Pulpit	0-3	10-27	1.25-1.40	0.6-2	0.16-0.18	0.0-2.9	0.5-2.0	.37	.37	2	5	56	4e	4e
	3-10	18-35	1.25-1.40	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37					
	10-24	10-35	1.35-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32					
	24-34	---	---	0.00-0.2	---	---	---	---	---					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
17:														
Cahona	0-2	15-27	1.25-1.40	0.09-0.9	0.10-0.13	0.0-3.0	1.0-2.0	.15	.28	4	3	86	4e	---
	2-36	20-35	1.25-1.40	0.03-0.3	0.10-0.16	0.0-3.0	0.0-1.0	.20	.37					
	36-60	15-27	1.25-1.40	0.09-0.9	0.10-0.13	0.0-3.0	0.0-1.0	.20	.37					
Zigzag	0-3	27-40	1.35-1.40	0.2-0.6	0.08-0.10	3.0-5.9	1.0-2.0	.20	.20	2	8	0	7e	---
	3-13	27-40	1.30-1.40	0.06-0.6	0.16-0.19	3.0-5.9	0.0-1.0	.24	.24					
	13-23	---	---	0.00-0.2	---	---	---	---	---					
18:														
Camac	0-3	10-18	1.40-1.50	2-6	0.06-0.08	0.0-2.9	0.4-0.6	.10	.28	2	6	48	7e	---
	3-16	15-27	1.40-1.50	0.6-2	0.09-0.13	0.0-2.9	0.3-0.5	.15	.32					
	16-34	18-35	1.45-1.55	0.2-0.6	0.12-0.16	3.0-5.9	0.2-0.4	.32	.32					
	34-44	---	---	0.00-0.2	---	---	---	---	---					
Kimbeto	0-2	15-20	1.40-1.50	2-6	0.12-0.14	0.0-2.9	0.5-0.8	.28	.28	5	3	86	7s	---
	2-10	20-27	1.45-1.55	0.6-2	0.08-0.10	0.0-2.9	0.5-0.8	.37	.37					
	10-54	18-27	1.45-1.55	0.6-2	0.06-0.08	0.0-2.9	0.3-0.6	.28	.32					
	54-80	20-27	1.45-1.55	0.6-2	0.05-0.07	0.0-2.9	0.2-0.4	.15	.32					
Badland	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
19:														
Chimrock, sodic	0-5	20-27	1.25-1.40	0.6-2	0.14-0.21	3.0-5.9	1.0-2.0	.28	.28	2	4L	86	6s	---
	5-17	20-35	1.15-1.40	0.2-0.6	0.17-0.21	3.0-5.9	0.5-1.0	.28	.28					
	17-68	25-35	1.25-1.40	0.2-2	0.14-0.21	3.0-5.9	0.5-1.0	.24	.24					
	68-80	25-35	1.15-1.30	0.2-2	0.14-0.16	3.0-5.9	0.0-0.5	.24	.24					
20:														
Chimrock	0-15	10-18	1.25-1.40	2-6	0.14-0.18	0.0-2.9	1.0-2.0	.28	.28	5	3	86	6c	2e
	15-32	18-35	1.25-1.40	0.2-2	0.14-0.21	3.0-5.9	0.5-1.0	.37	.37					
	32-80	10-27	1.25-1.60	0.6-20	0.06-0.18	0.0-2.9	0.5-1.0	.28	.28					
21:														
Claysprings	0-2	20-30	1.40-1.50	0.6-2	0.03-0.06	3.0-5.9	0.4-0.6	.05	.32	1	8	0	7e	---
	2-4	40-55	1.45-1.55	0.06-0.2	0.13-0.15	6.0-8.9	0.2-0.5	.20	.20					
	4-12	40-55	1.40-1.50	0.00-0.06	0.11-0.13	6.0-8.9	0.2-0.5	.20	.20					
	12-22	---	---	0.00-0.2	---	---	---	---	---					
Badland	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
22:														
Claysprings	0-3	27-35	1.25-1.40	0.2-0.6	0.10-0.12	0.0-2.9	0.0-0.5	.10	.28	2	8	0	7e	---
	3-18	35-60	1.20-1.35	0.06-0.2	0.16-0.18	6.0-8.9	0.0-0.5	.28	.28					
	18-28	---	---	0.00-0.02	---	---	---	---	---					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
23:														
Cowboy	0-9	40-60	1.15-1.30	0.06-0.2	0.14-0.16	6.0-8.9	1.0-2.0	.15	.15	5	4L	86	6c	3s
	9-80	40-60	1.15-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.0-0.5	.17	.17					
24:														
Cowboy	0-5	40-60	1.15-1.30	0.06-0.2	0.14-0.17	6.0-8.9	1.0-1.5	.20	.20	5	4L	86	6c	---
	5-61	40-60	1.15-1.30	0.06-0.2	0.14-0.17	6.0-8.9	0.0-0.5	.24	.24					
	61-71	---	---	0.00-0.2	---	---	---	---	---					
Kava	0-2	27-40	1.15-1.30	0.2-0.6	0.17-0.21	3.0-5.9	1.0-1.5	.28	.28	2	4L	86	6s	---
	2-5	40-60	1.15-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.17	.17					
	5-15	40-60	1.15-1.30	0.06-0.2	0.14-0.17	6.0-8.9	0.0-0.5	.24	.24					
	15-25	---	---	0.00-0.2	---	---	---	---	---					
25:														
Cowboy	0-5	40-60	1.15-1.30	0.06-0.2	0.14-0.17	6.0-8.9	1.0-1.5	.20	.20	5	4L	86	6s	---
	5-61	40-60	1.15-1.30	0.06-0.2	0.14-0.17	6.0-8.9	0.0-0.5	.24	.24					
	61-71	---	---	0.00-0.2	---	---	---	---	---					
Kava	0-2	27-40	1.15-1.30	0.2-0.6	0.17-0.21	3.0-5.9	1.0-1.5	.28	.28	2	4L	86	6s	---
	2-5	40-60	1.15-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.17	.17					
	5-15	40-60	1.15-1.30	0.06-0.2	0.14-0.17	6.0-8.9	0.0-0.5	.24	.24					
	15-25	---	---	0.00-0.2	---	---	---	---	---					
26:														
Decorock	0-5	27-40	1.25-1.40	0.06-0.6	0.09-0.11	0.0-2.9	1.5-2.0	.05	.20	4	8	0	6e	---
	5-10	27-40	1.25-1.40	0.06-0.6	0.13-0.16	3.0-5.9	0.5-1.0	.15	.24					
	10-15	35-50	1.15-1.30	0.06-0.2	0.10-0.12	3.0-5.9	0.5-1.0	.10	.17					
	15-26	35-45	1.15-1.40	0.06-0.2	0.10-0.16	3.0-5.9	0.5-1.0	.10	.17					
	26-58	35-60	1.15-1.30	0.06-0.2	0.04-0.05	0.0-2.9	0.5-1.0	.02	.17					
	58-68	---	---	0.00-0.2	---	---	---	---	---					
Salamander	0-3	10-20	1.35-1.50	0.6-6	0.14-0.16	0.0-2.9	1.0-2.0	.28	.28	2	8	0	6c	---
	3-10	18-27	1.25-1.50	0.6-2	0.14-0.16	0.0-2.9	0.5-1.0	.32	.32					
	10-27	18-27	1.25-1.50	0.6-2	0.03-0.06	0.0-2.9	0.0-0.5	.05	.32					
	27-35	5-18	1.35-1.50	0.6-6	0.03-0.06	0.0-2.9	0.0-0.5	.05	.32					
	35-50	5-18	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.0-0.5	.10	.32					
	50-80	5-18	1.45-1.60	6-20	0.04-0.06	0.0-2.9	0.0-0.5	.15	.24					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
27:														
Decorock	0-5	27-40	1.25-1.40	0.06-0.6	0.09-0.11	0.0-2.9	1.5-2.0	.05	.20	4	8	0	7e	---
	5-10	27-40	1.25-1.40	0.06-0.6	0.13-0.16	3.0-5.9	0.5-1.0	.15	.24					
	10-15	35-50	1.15-1.30	0.06-0.2	0.10-0.12	3.0-5.9	0.5-1.0	.10	.17					
	15-26	35-45	1.15-1.40	0.06-0.2	0.10-0.16	3.0-5.9	0.5-1.0	.10	.17					
	26-58	35-60	1.15-1.30	0.06-0.2	0.04-0.05	0.0-2.9	0.5-1.0	.02	.17					
	58-68	---	---	0.00-0.2	---	---	---	---	---					
Salamander	0-3	10-20	1.35-1.50	0.6-6	0.14-0.16	0.0-2.9	1.0-2.0	.28	.28	2	8	0	6c	---
	3-10	18-27	1.25-1.50	0.6-2	0.14-0.16	0.0-2.9	0.5-1.0	.32	.32					
	10-27	18-27	1.25-1.50	0.6-2	0.03-0.06	0.0-2.9	0.0-0.5	.05	.32					
	27-35	5-18	1.35-1.50	0.6-6	0.03-0.06	0.0-2.9	0.0-0.5	.05	.32					
	35-50	5-18	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.0-0.5	.10	.32					
	50-80	5-18	1.45-1.60	6-20	0.04-0.06	0.0-2.9	0.0-0.5	.15	.24					
Badland	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8	---
28:														
Dolcan	0-3	8-20	1.25-1.35	0.6-2	0.03-0.07	0.0-2.9	1.0-2.0	.05	.28	2	8	0	6e	---
	3-6	20-35	1.25-1.40	0.2-0.6	0.16-0.19	0.0-2.9	0.0-1.0	.15	.24					
	6-10	20-35	1.25-1.40	0.2-0.6	0.16-0.19	0.0-2.9	0.0-1.0	.15	.24					
	10-20	---	---	0.00-0.02	---	---	---	---	---					
Kucu	0-2	10-20	1.25-1.40	2-6	0.13-0.16	0.0-3.0	1.0-2.0	.28	.28	2	4L	86	6e	---
	2-15	20-35	1.25-1.40	0.6-2	0.13-0.19	0.0-3.0	0.5-1.0	.28	.28					
	15-38	10-20	1.25-1.50	0.6-6	0.05-0.09	0.0-3.0	0.0-1.0	.10	.28					
	38-80	5-15	1.25-1.60	2-20	0.02-0.04	0.0-3.0	0.0-1.0	.10	.20					
29:														
Elias	0-6	5-20	1.35-1.50	0.09-0.9	0.13-0.15	0.0-3.0	0.5-1.0	.24	.24	2	3	86	7s	---
	6-39	18-35	1.25-1.50	0.09-0.3	0.10-0.18	3.0-6.0	0.0-0.5	.37	.37					
	39-80	10-35	1.25-1.50	0.09-0.9	0.10-0.18	3.0-6.0	0.0-0.5	.37	.37					
Yarts	0-3	8-18	1.35-1.45	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28	5	3	86	4c	---
	3-11	8-18	1.35-1.45	2-6	0.11-0.14	0.0-2.9	0.5-1.0	.28	.28					
	11-60	8-18	1.35-1.45	2-6	0.11-0.12	0.0-2.9	0.5-1.0	.28	.28					
30:														
Farb	0-3	5-18	1.45-1.55	2-6	0.08-0.13	0.0-2.9	0.0-1.0	.24	.24	1	3	86	6s	---
	3-16	5-18	1.45-1.55	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.24	.24					
	16-26	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop	0-60	---	---	0.00- 0.01	---	---	---	---	---	--	8	0	8s	---

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
31:														
Farb	0-1	5-18	1.35-1.60	0.2-6	0.04-0.10	0.0-3.0	0.5-1.0	.15	.37	1	4	86	7e	---
	1-12	5-18	1.35-1.50	2-6	0.07-0.10	0.0-3.0	0.0-0.5	.17	.32					
	12-22	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
Fruitland	0-4	8-18	1.35-1.45	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.24	.24	5	3	86	4e	---
	4-60	8-18	1.35-1.45	2-6	0.11-0.12	0.0-2.9	0.0-0.5	.32	.32					
32:														
Fardraw	0-9	15-27	1.25-1.35	0.6-2	0.06-0.09	0.0-2.9	2.0-4.0	.10	.24	5	8	0	7s	---
	9-13	27-35	1.25-1.35	0.2-0.6	0.09-0.11	0.0-2.9	1.0-2.0	.05	.20					
	13-80	30-50	1.15-1.30	0.06-0.2	0.07-0.10	3.0-5.9	0.5-1.0	.10	.24					
33:														
Farview	0-2	5-10	1.45-1.55	6-20	0.05-0.07	0.0-2.9	0.5-1.0	.10	.17	1	3	86	7s	---
	2-6	10-18	1.50-1.60	2-6	0.10-0.14	0.0-2.9	0.5-1.0	.20	.28					
	6-16	---	---	0.00-0.2	---	---	---	---	---					
Beclabito	0-4	10-18	1.40-1.50	2-6	0.11-0.15	0.0-2.9	0.3-0.5	.20	.28	3	3	86	6c	---
	4-14	18-30	1.55-1.65	0.6-2	0.10-0.14	0.0-2.9	0.3-0.5	.24	.32					
	14-36	18-27	1.55-1.65	0.2-0.6	0.08-0.11	0.0-2.9	0.2-0.5	.24	.32					
	36-45	10-27	1.50-1.60	0.2-0.6	0.05-0.08	0.0-2.9	0.2-0.5	.28	.32					
	45-56	27-35	1.50-1.60	0.2-0.6	0.08-0.10	3.0-5.9	0.2-0.5	.28	.32					
	56-66	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
34:														
Farview	0-2	5-10	1.45-1.55	6-20	0.05-0.07	0.0-2.9	0.5-1.0	.10	.17	1	3	86	7s	---
	2-9	10-18	1.50-1.60	2-6	0.10-0.14	0.0-2.9	0.5-1.0	.20	.28					
	9-19	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
35:														
Fluvents	0-6	---	---	0.2-20	---	---	0.5-3.0	---	---	5	8	0	6w	---
	6-60	0-10	1.45-1.60	6-20	0.03-0.06	0.0-2.9	0.5-1.0	.05	.20					
Fluvaquents	0-8	5-40	1.20-1.60	0.2-6	0.06-0.18	3.0-5.9	0.5-1.0	.20	.24	3	3	86	6w	---
	8-60	0-10	1.50-1.65	6-20	0.05-0.08	0.0-2.9	0.0-0.5	.10	.28					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
36:														
Gladel	0-3	5-18	1.35-1.45	2-6	0.10-0.12	0.0-2.9	1.0-2.0	.15	.24	1	3	86	6s	---
	3-11	5-18	1.40-1.50	2-6	0.08-0.10	0.0-2.9	0.0-0.5	.15	.24					
	11-18	5-18	1.40-1.50	2-6	0.09-0.12	0.0-2.9	0.5-1.0	.15	.24					
	18-28	---	---	0.00-0.2	---	---	---	---	---					
Pulpit	0-3	10-27	1.25-1.40	0.6-2	0.16-0.18	0.0-2.9	0.5-2.0	.37	.37	2	5	56	4e	4e
	3-10	18-35	1.25-1.40	0.2-0.6	0.19-0.21	3.0-5.9	0.5-1.0	.37	.37					
	10-24	10-35	1.35-1.50	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32					
	24-34	---	---	0.00-0.2	---	---	---	---	---					
37:														
Greycap	0-2	15-27	1.25-1.40	0.6-6	0.14-0.18	0.0-2.9	1.0-2.0	.28	.28	1	4L	86	6s	---
	2-6	27-35	1.25-1.40	0.2-0.6	0.16-0.19	0.0-2.9	0.5-1.0	.24	.24					
	6-16	---	---	0.00-0.2	---	---	---	---	---					
Nomad	0-2	5-15	1.15-1.60	2-20	0.06-0.08	0.0-2.9	1.5-2.0	.20	.20	3	4L	86	6c	---
	2-14	10-18	1.25-1.40	2-20	0.13-0.16	0.0-2.9	0.5-1.0	.37	.37					
	14-21	18-35	1.25-1.40	0.6-2	0.13-0.16	0.0-2.9	0.5-1.0	.37	.37					
	21-30	40-45	1.15-1.30	0.06-2	0.13-0.15	3.0-5.9	0.5-1.0	.17	.17					
	30-40	---	---	0.00-0.2	---	---	---	---	---					
38:														
Gypsey	0-3	20-30	1.25-1.40	0.2-2	0.14-0.18	0.0-2.9	0.5-1.0	.17	.17	2	5	56	6c	3e
	3-9	18-35	1.25-1.40	0.2-2	0.14-0.21	0.0-2.9	0.0-0.5	.37	.37					
	9-28	20-35	1.25-1.40	0.2-2	0.14-0.21	0.0-2.9	0.0-0.5	.43	.43					
	28-38	---	---	0.00-0.2	---	---	---	---	---					
39:														
Gypsey	0-3	20-30	1.25-1.40	0.2-2	0.14-0.18	0.0-2.9	0.5-1.0	.17	.17	2	5	56	6c	4e
	3-9	18-35	1.25-1.40	0.2-2	0.14-0.21	0.0-2.9	0.0-0.5	.37	.37					
	9-28	20-35	1.25-1.40	0.2-2	0.14-0.21	0.0-2.9	0.0-0.5	.43	.43					
	28-38	---	---	0.00-0.2	---	---	---	---	---					
40:														
Herm	0-12	20-27	1.40-1.50	0.6-2	0.14-0.16	3.0-6.0	1.0-2.0	.28	.28	5	6	48	6e	---
	12-15	20-35	1.40-1.50	0.2-2	0.16-0.18	3.0-6.0	1.0-2.0	.28	.28					
	15-73	35-45	1.40-1.50	0.06-0.2	0.14-0.20	6.0-9.0	0.5-1.0	.24	.24					
41:														
Hope	0-3	27-35	1.15-1.30	0.2-0.6	0.17-0.21	3.0-5.9	1.5-2.0	.28	.28	5	4L	86	6s	3e
	3-10	20-35	1.15-1.40	0.2-2	0.14-0.21	3.0-5.9	0.5-1.0	.37	.37					
	10-80	20-35	1.15-1.40	0.2-2	0.14-0.21	3.0-5.9	0.0-0.5	.37	.37					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
42:														
Hoskay	0-2	18-27	1.20-1.30	0.6-2	0.12-0.14	0.0-2.9	0.4-0.6	.20	.37	5	5	56	7c	---
	2-6	35-50	1.35-1.45	0.06-0.2	0.14-0.19	6.0-8.9	0.4-0.6	.24	.24					
	6-14	35-50	1.45-1.55	0.06-0.2	0.10-0.14	6.0-8.9	0.2-0.5	.24	.24					
	14-27	35-50	1.45-1.55	0.2-0.6	0.07-0.09	3.0-5.9	0.2-0.5	.24	.24					
	27-65	30-50	1.40-1.50	0.06-0.2	0.05-0.08	6.0-8.9	0.2-0.5	.20	.20					
Patel	0-2	27-35	1.20-1.30	0.2-0.6	0.13-0.18	3.0-5.9	0.4-0.6	.20	.37	2	5	56	7c	---
	2-12	40-50	1.35-1.45	0.06-0.2	0.13-0.17	3.0-5.9	0.4-0.6	.20	.20					
	12-16	35-45	1.45-1.55	0.2-0.6	0.09-0.10	3.0-5.9	0.3-0.5	.37	.37					
	16-33	27-40	1.45-1.55	0.2-0.6	0.09-0.11	3.0-5.9	0.2-0.4	.37	.37					
	33-43	---	---	0.00-0.2	---	---	---	---	---					
Badland	0-60	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
43:														
Ives	0-1	8-20	1.35-1.50	2-6	0.09-0.12	0.0-2.9	0.5-1.0	.28	.28	5	3	86	6c	3s
	1-80	10-15	1.25-1.60	2-20	0.07-0.10	0.0-2.9	0.0-0.5	.28	.28					
44:														
Jeddito	0-9	5-10	1.55-1.65	6-20	0.09-0.10	0.0-2.9	0.2-0.4	.20	.20	5	2	134	7c	3e
	9-27	4-10	1.50-1.60	6-20	0.08-0.10	0.0-2.9	0.0-0.5	.20	.20					
	27-60	7-30	1.50-1.60	0.6-2	0.09-0.11	0.0-2.9	0.0-0.5	.24	.24					
Escavada	0-4	5-15	1.40-1.50	0.6-2	0.15-0.17	0.0-2.9	0.2-0.6	.55	.55	5	3	86	6e	---
	4-80	2-42	1.50-1.55	0.6-2	0.06-0.08	0.0-2.9	0.2-0.6	.17	.17					
45:														
Jeddito	0-5	5-10	1.45-1.55	6-20	0.08-0.10	0.0-2.9	0.2-0.4	.20	.20	5	2	134	7c	3e
	5-16	5-10	1.45-1.55	6-20	0.06-0.08	0.0-2.9	0.2-0.4	.17	.17					
	16-70	10-30	1.45-1.55	0.2-0.6	0.10-0.14	0.0-2.9	0.2-0.6	.24	.24					
46:														
Juanalo	0-1	10-20	1.35-1.50	0.6-6	0.08-0.13	0.0-2.9	1.0-2.0	.15	.24	1	8	0	6s	---
	1-3	10-27	1.25-1.40	0.6-6	0.14-0.18	0.0-2.9	0.5-1.0	.28	.28					
	3-9	18-35	1.25-1.35	0.6-6	0.14-0.18	0.0-2.9	0.0-0.5	.28	.28					
	9-11	18-35	1.25-1.35	0.6-6	0.07-0.09	0.0-2.9	0.0-0.5	.10	.28					
	11-21	---	---	0.00-0.2	---	---	---	---	---					
47:														
Katzine	0-2	10-20	1.25-1.50	0.06-6	0.05-0.08	0.0-3.0	1.0-2.0	.15	.28	5	8	0	7e	---
	2-7	10-18	1.25-1.50	0.06-6	0.05-0.08	0.0-3.0	1.0-2.0	.15	.28					
	7-80	10-18	1.25-1.50	0.06-6	0.03-0.06	0.0-3.0	0.5-1.0	.15	.32					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
48:														
Lazear	0-5	15-20	1.35-1.40	0.6-2	0.06-0.08	0.0-2.9	0.5-1.0	.15	.37	1	8	0	7s	---
	5-15	20-32	1.40-1.45	0.6-2	0.08-0.15	0.0-2.9	0.0-0.5	.24	.43					
	15-19	---	---	0.06-0.2	---	---	---	---	---					
Rock outcrop	0-60	---	---	0.00- 0.01	---	---	---	---	---	--	8	0	8s	---
49:														
Lillings	0-2	27-35	1.15-1.30	0.2-0.6	0.16-0.19	0.0-2.9	0.5-1.0	.32	.32	5	7	38	6s	---
	2-60	18-35	1.25-1.30	0.2-2	0.14-0.19	0.0-2.9	0.0-0.5	.43	.43					
50:														
Littlehat	0-2	18-27	1.20-1.30	0.6-2	0.08-0.13	0.0-2.9	0.3-0.5	.43	.43	2	4L	86	7s	---
	2-36	18-35	1.30-1.50	0.6-2	0.04-0.10	3.0-5.9	0.2-0.4	.43	.43					
	36-46	---	---	0.00-0.2	---	---	---	---	---					
Persayo	0-2	15-20	1.50-1.60	0.6-2	0.19-0.21	0.0-2.9	0.2-0.6	.43	.43	1	4L	86	7s	---
	2-6	18-27	1.40-1.50	0.6-2	0.10-0.12	0.0-2.9	0.2-0.4	.37	.37					
	6-18	27-35	1.50-1.60	0.2-0.6	0.10-0.12	3.0-5.9	0.2-0.4	.32	.32					
	18-28	---	---	0.00-0.2	---	---	---	---	---					
Badland	0-60	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
51:														
Littlehat	0-2	18-27	1.20-1.30	0.6-2	0.08-0.13	0.0-2.9	0.3-0.5	.43	.43	2	4L	86	7s	---
	2-31	18-35	1.30-1.50	0.6-2	0.04-0.10	3.0-5.9	0.2-0.4	.43	.43					
	31-41	---	---	0.00-0.2	---	---	---	---	---					
Persayo	0-2	15-20	1.50-1.60	0.6-2	0.15-0.17	0.0-2.9	0.2-0.6	.55	.55	1	3	86	7s	---
	2-6	18-27	1.40-1.50	0.6-2	0.10-0.12	0.0-2.9	0.2-0.4	.37	.37					
	6-17	27-35	1.50-1.60	0.2-0.6	0.10-0.12	3.0-5.9	0.2-0.4	.32	.32					
	17-27	---	---	0.00-0.2	---	---	---	---	---					
Nataani	0-3	10-18	1.40-1.50	0.6-2	0.15-0.17	0.0-2.9	0.4-0.8	.55	.55	2	3	86	7c	---
	3-9	15-20	1.35-1.45	0.6-2	0.15-0.18	0.0-2.9	0.4-0.6	.49	.49					
	9-21	15-20	1.15-1.35	0.6-2	0.10-0.15	0.0-2.9	0.4-0.6	.49	.49					
	21-30	10-18	1.50-1.60	0.6-2	0.08-0.10	0.0-2.9	0.3-0.5	.49	.49					
	30-40	---	---	0.00-0.2	---	---	---	---	---					
52:														
Littlewater	0-1	0-5	0.20-1.00	14-85	0.15-0.45	---	70-95	---	---	5	8	0	7e	---
	1-7	10-15	1.25-1.50	0.6-6	0.06-0.09	0.0-3.0	1.0-2.0	.10	.28					
	7-20	5-15	1.25-1.50	2-6	0.05-0.09	0.0-3.0	1.0-2.0	.10	.28					
	20-31	5-15	1.25-1.50	2-6	0.05-0.08	0.0-3.0	0.5-1.0	.10	.28					
	31-80	10-20	1.25-1.50	2-6	0.05-0.08	0.0-3.0	0.5-1.0	.10	.28					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
52:														
Rubbleland	0-60	0-10	2.00-2.35	20-20	0.00-0.01	0.0-2.9	0.0-0.1	---	---	--	8	0	8s	---
Rock outcrop	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
53:														
Longburn	0-1	10-20	1.35-1.50	0.2-2	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28	1	3	86	7e	---
	1-4	10-20	1.35-1.50	0.2-2	0.07-0.09	0.0-2.9	1.0-2.0	.10	.28					
	4-17	20-35	1.25-1.40	0.2-0.6	0.09-0.11	0.0-2.9	0.5-1.0	.10	.24					
	17-27	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop	0-60	---	---	0.00- 0.01	---	---	---	---	---	--	8	0	8s	---
54:														
Longburn	0-1	10-20	1.35-1.50	0.2-2	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28	1	3	86	7e	---
	1-4	10-20	1.35-1.50	0.2-2	0.07-0.09	0.0-2.9	1.0-2.0	.10	.28					
	4-17	20-35	1.25-1.40	0.2-0.6	0.09-0.11	0.0-2.9	0.5-1.0	.10	.24					
	17-27	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop	0-60	---	---	0.00- 0.01	---	---	---	---	---	--	8	0	8s	---
55:														
Mack	0-13	15-20	1.40-1.50	0.6-2	0.13-0.18	0.0-2.9	0.5-1.0	.28	.28	2	3	86	6c	---
	13-33	20-35	1.40-1.50	0.6-2	0.14-0.18	0.0-2.9	0.0-1.0	.24	.24					
	33-60	10-25	1.30-1.40	0.6-2	0.13-0.16	0.0-2.9	0.0-0.5	.28	.28					
56:														
Mack	0-4	5-20	1.35-1.60	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86	6c	2e
	4-14	5-20	1.35-1.60	2-6	0.13-0.15	0.0-2.9	0.5-2.0	.24	.24					
	14-43	18-27	1.40-1.70	0.6-2	0.14-0.18	0.0-2.9	0.5-1.0	.37	.37					
	43-56	18-27	1.40-1.70	0.6-6	0.14-0.18	0.0-2.9	0.1-0.5	.37	.37					
	56-80	18-35	1.40-1.70	0.6-2	0.14-0.18	0.0-2.9	0.1-0.5	.37	.37					
57:														
Mack	0-4	5-20	1.35-1.60	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	5	3	86	6c	3e
	4-14	5-20	1.35-1.60	2-6	0.13-0.15	0.0-2.9	0.5-2.0	.24	.24					
	14-43	18-27	1.40-1.70	0.6-2	0.14-0.18	0.0-2.9	0.5-1.0	.37	.37					
	43-56	18-27	1.40-1.70	0.6-6	0.14-0.18	0.0-2.9	0.1-0.5	.37	.37					
	56-80	18-35	1.40-1.70	0.6-2	0.14-0.18	0.0-2.9	0.1-0.5	.37	.37					
58:														
Mariano	0-11	10-20	1.35-1.50	0.6-6	0.14-0.17	0.0-2.9	1.0-2.0	.28	.28	3	3	86	6c	4s
	11-29	10-18	1.35-1.50	0.6-6	0.03-0.04	0.0-2.9	0.5-1.0	.05	.24					
	29-51	10-18	1.35-1.50	0.6-6	0.03-0.04	0.0-2.9	0.5-1.0	.05	.32					
	51-80	10-18	1.35-1.50	0.6-6	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
59:														
Mariano	0-11	10-20	1.35-1.50	0.6-6	0.14-0.17	0.0-2.9	1.0-2.0	.28	.28	3	3	86	6c	4s
	11-29	10-18	1.35-1.50	0.6-6	0.03-0.04	0.0-2.9	0.5-1.0	.05	.24					
	29-51	10-18	1.35-1.50	0.6-6	0.03-0.04	0.0-2.9	0.5-1.0	.05	.32					
	51-80	10-18	1.35-1.50	0.6-6	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32					
60:														
Mariano, Stony	0-11	5-15	1.35-1.50	0.6-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28	3	3	86	6c	4s
	11-29	10-18	1.35-1.50	0.6-6	0.03-0.04	0.0-2.9	0.5-1.0	.05	.24					
	29-51	10-18	1.35-1.50	0.6-6	0.03-0.04	0.0-2.9	0.5-1.0	.05	.32					
	51-80	10-18	1.35-1.50	0.6-6	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32					
61:														
Mikett	0-8	27-35	1.30-1.40	0.2-0.6	0.15-0.17	0.0-2.9	0.5-1.0	.24	.24	5	4L	86	7s	---
	8-60	18-35	1.35-1.45	0.2-0.6	0.09-0.15	0.0-2.9	0.5-1.0	.28	.28					
62:														
Mikett	0-8	27-35	1.30-1.40	0.2-0.6	0.15-0.17	0.0-2.9	0.5-1.0	.24	.24	5	4L	86	6s	4s
	8-60	27-35	1.30-1.40	0.2-0.6	0.15-0.17	0.0-2.9	0.0-0.5	.28	.28					
63:														
Mikim	0-3	27-35	1.25-1.35	0.2-0.6	0.17-0.20	0.0-2.9	0.5-2.0	.24	.24	5	4L	86	6s	4s
	3-15	27-35	1.25-1.35	0.2-0.6	0.17-0.20	0.0-2.9	0.5-1.0	.28	.28					
	15-32	10-35	1.25-1.40	0.2-0.6	0.14-0.17	0.0-2.9	0.5-1.0	.32	.32					
	32-60	27-35	1.25-1.35	0.2-0.6	0.17-0.20	0.0-2.9	0.5-1.0	.28	.28					
64:														
Mikim	0-3	18-27	1.25-1.40	0.6-2	0.14-0.18	0.0-2.9	0.5-2.0	.37	.37	5	4L	86	6s	4s
	3-15	27-35	1.25-1.35	0.2-0.6	0.17-0.20	0.0-2.9	0.0-1.0	.28	.28					
	15-32	10-35	1.25-1.40	0.2-0.6	0.14-0.17	0.0-2.9	0.0-1.0	.32	.32					
	32-60	27-35	1.25-1.35	0.2-0.6	0.17-0.20	0.0-2.9	0.0-1.0	.28	.28					
65:														
Monierco	0-2	8-19	1.25-1.50	0.6-6	0.10-0.14	0.0-3.0	0.5-1.0	.28	.28	2	3	86	6s	---
	2-8	10-23	1.25-1.50	0.6-6	0.10-0.14	0.0-3.0	0.0-0.5	.32	.32					
	8-18	12-25	1.25-1.50	0.2-6	0.08-0.13	0.0-3.0	0.0-0.5	.15	.15					
	18-28	---	---	0.00-0.2	---	---	---	---	---					
66:														
Morefield	0-2	10-20	1.20-1.30	2-6	0.15-0.17	0.0-2.9	1.0-3.0	.28	.28	5	5	56	3c	---
	2-24	18-35	1.40-1.55	0.2-0.6	0.17-0.20	3.0-5.9	0.5-2.0	.24	.24					
	24-60	18-35	1.40-1.55	0.2-0.6	0.16-0.20	3.0-5.9	0.0-0.5	.28	.28					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
67:														
Morefield	0-2	10-20	1.20-1.30	2-6	0.15-0.17	0.0-2.9	1.0-3.0	.28	.28	5	5	56	3e	---
	2-24	18-35	1.40-1.55	0.2-0.6	0.17-0.20	3.0-5.9	0.5-2.0	.24	.24					
	24-60	18-35	1.40-1.55	0.2-0.6	0.16-0.20	3.0-5.9	0.0-0.5	.28	.28					
68:														
Nataani	0-10	5-15	1.35-1.50	2-6	0.13-0.15	0.0-3.0	1.0-2.0	.24	.24	3	3	86	6c	---
	10-23	10-20	1.35-1.50	0.6-6	0.10-0.13	0.0-3.0	0.5-1.0	.28	.28					
	23-37	5-20	1.35-1.50	0.6-6	0.10-0.13	0.0-3.0	0.5-1.0	.28	.28					
	37-39	5-20	1.35-1.50	0.6-6	0.10-0.13	0.0-3.0	0.0-0.5	.32	.32					
	39-49	---	---	0.00- 0.00	---	---	---	---	---					
Yogovuci	0-2	10-20	1.35-1.50	2-6	0.14-0.17	0.0-2.9	1.0-1.5	.28	.28	5	3	86	6c	---
	2-6	10-25	1.25-1.50	0.6-6	0.14-0.19	0.0-2.9	0.5-1.0	.32	.32					
	6-13	27-40	1.25-1.40	0.06-0.6	0.17-0.20	3.0-5.9	0.5-1.0	.32	.32					
	13-35	18-35	1.25-1.40	0.2-2	0.13-0.19	3.0-5.9	0.0-0.5	.32	.32					
	35-75	10-50	1.15-1.60	0.06-20	0.05-0.19	0.0-5.9	0.0-0.5	.20	.20					
	75-80	5-20	1.35-1.60	0.06-20	0.02-0.05	0.0-2.9	0.0-0.5	.32	.32					
69:														
Oagamati	0-1	27-35	1.15-1.30	0.2-0.6	0.17-0.21	3.0-5.9	1.0-1.5	.28	.28	3	4L	86	7s	---
	1-5	40-50	1.15-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.17	.17					
	5-23	40-60	1.15-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.17	.17					
	23-35	40-50	1.15-1.30	0.06-0.2	0.14-0.16	6.0-8.9	0.5-1.0	.17	.17					
	35-45	---	---	0.00-0.2	---	---	---	---	---					
70:														
Pagayvay	0-1	5-15	1.30-1.40	2-6	0.03-0.04	0.0-0.0	0.5-1.0	.05	.24	5	8	0	6s	---
	1-60	5-10	1.30-1.40	2-20	0.01-0.04	0.0-0.0	0.0-0.5	.02	.15					
71:														
Persayo	0-2	20-26	1.40-1.50	0.6-2	0.16-0.18	0.0-2.9	0.2-0.6	.37	.37	1	4L	86	7s	---
	2-17	27-35	1.50-1.60	0.2-0.6	0.10-0.12	3.0-5.9	0.2-0.4	.32	.32					
	17-27	---	---	0.00-0.2	---	---	---	---	---					
Cairn	0-2	15-18	1.45-1.55	2-6	0.10-0.13	0.0-2.9	0.4-0.6	.15	.28	3	5	56	7c	---
	2-9	25-35	1.40-1.50	0.6-2	0.14-0.20	3.0-5.9	0.3-0.5	.37	.37					
	9-19	18-25	1.40-1.50	0.6-2	0.06-0.10	0.0-2.9	0.3-0.5	.10	.37					
	19-46	17-25	1.50-1.60	2-6	0.03-0.05	0.0-2.9	0.2-0.4	.10	.37					
	46-56	---	---	0.00-0.2	---	---	---	---	---					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
71:														
Patel	0-1	18-27	1.20-1.30	0.6-2	0.12-0.14	0.0-2.9	0.4-0.6	.10	.32	2	6	48	7c	---
	1-8	40-50	1.35-1.45	0.06-0.2	0.13-0.17	3.0-5.9	0.4-0.6	.20	.20					
	8-24	35-45	1.45-1.55	0.2-0.6	0.09-0.10	3.0-5.9	0.3-0.5	.37	.37					
	24-37	27-40	1.45-1.55	0.2-0.6	0.09-0.11	3.0-5.9	0.2-0.4	.37	.37					
	37-47	---	---	0.00-0.2	---	---	---	---	---					
72:														
Persayo	0-2	15-27	1.15-1.30	0.2-0.6	0.15-0.18	3.0-5.9	0.5-1.0	.15	.28	2	4L	86	7e	---
	2-11	20-35	1.15-1.30	0.2-0.6	0.17-0.21	3.0-5.9	0.0-0.5	.37	.37					
	11-21	---	---	0.00-0.2	---	---	---	---	---					
73:														
Persayo	0-2	27-40	1.15-1.30	0.2-0.6	0.17-0.21	3.0-5.9	0.5-1.0	.32	.32	2	4L	86	7e	---
	2-11	20-35	1.15-1.30	0.2-0.6	0.17-0.21	3.0-5.9	0.0-0.5	.37	.37					
	11-21	---	---	0.00-0.2	---	---	---	---	---					
74:														
Persayo	0-2	27-40	1.15-1.30	0.2-0.6	0.17-0.21	3.0-5.9	0.5-1.0	.32	.32	2	4L	86	6s	---
	2-11	20-35	1.15-1.30	0.2-0.6	0.17-0.21	3.0-5.9	0.0-0.5	.37	.37					
	11-21	---	---	0.00-0.2	---	---	---	---	---					
Yogovuci	0-3	10-18	1.25-1.40	2-6	0.14-0.18	0.0-2.9	1.0-1.5	.28	.28	5	4L	86	6c	3e
	3-12	18-35	1.25-1.40	0.2-2	0.14-0.21	3.0-5.9	0.5-1.0	.32	.32					
	12-17	27-35	1.25-1.40	0.2-0.6	0.17-0.21	3.0-5.9	0.5-1.0	.24	.24					
	17-22	27-35	1.25-1.40	0.2-0.6	0.17-0.21	3.0-5.9	0.5-1.0	.24	.24					
	22-63	10-18	1.25-1.50	2-6	0.10-0.18	0.0-2.9	0.5-1.0	.32	.32					
	63-80	27-35	1.25-1.40	0.2-2	0.10-0.13	3.0-5.9	0.5-1.0	.10	.24					
75:														
Picliff	0-2	15-35	1.15-1.40	0.2-6	0.14-0.18	3.0-6.0	0.5-1.0	.37	.37	2	4L	86	6s	---
	2-6	8-35	1.15-1.40	0.2-6	0.10-0.14	0.0-3.0	0.0-0.5	.24	.43					
	6-15	7-35	1.15-1.40	0.2-6	0.07-0.10	0.0-3.0	0.0-0.5	.15	.43					
	15-25	---	---	0.00-0.2	---	---	---	---	---					
76:														
Pogo	0-2	15-27	1.25-1.35	0.6-2	0.15-0.18	0.0-2.9	2.0-4.0	.24	.24	5	8	0	6w	---
	2-60	5-45	1.30-1.60	0.2-0.6	0.10-0.20	0.0-2.9	1.0-3.0	.15	.15					
77:														
Prater	0-1	10-27	1.25-1.40	0.6-2	0.13-0.16	0.0-2.9	2.0-4.0	.24	.24	5	2	134	7e	---
	1-3	20-35	1.25-1.40	0.2-0.6	0.10-0.16	0.0-2.9	2.0-4.0	.15	.24					
	3-9	27-45	1.15-1.40	0.2-0.6	0.10-0.16	3.0-5.9	1.0-2.0	.10	.20					
	9-21	35-45	1.15-1.40	0.2-0.6	0.10-0.16	3.0-5.9	1.0-2.0	.10	.20					
	21-60	35-45	1.15-1.40	0.06-0.2	0.10-0.16	3.0-5.9	0.5-1.0	.15	.24					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
77:														
Dolcan	0-2	8-20	1.25-1.35	0.6-2	0.03-0.07	0.0-2.9	1.0-2.0	.05	.28	2	8	0	7e	---
	2-11	20-35	1.25-1.40	0.2-0.6	0.16-0.19	0.0-2.9	0.0-1.0	.15	.24					
	11-21	---	---	0.00-0.2	---	---	---	---	---					
78:														
Pulpit	0-5	10-25	1.20-1.30	0.6-2	0.16-0.18	0.0-2.9	0.5-1.0	.37	.37	2	5	56	4e	4e
	5-21	27-35	1.30-1.40	0.2-0.6	0.17-0.19	0.0-2.9	0.0-0.5	.37	.37					
	21-35	10-30	1.35-1.45	0.6-2	0.16-0.18	0.0-2.9	0.0-0.5	.32	.32					
	35-45	---	---	0.06-0.2	---	---	---	---	---					
79:														
Ramper	0-3	15-27	1.30-1.40	0.6-2	0.15-0.18	0.0-2.9	0.5-2.0	.37	.37	5	4L	86	3c	3c
	3-60	18-35	1.25-1.40	0.2-0.6	0.14-0.17	0.0-2.9	0.5-1.0	.28	.28					
80:														
Ravola	0-9	27-35	1.25-1.35	0.2-0.6	0.05-0.08	0.0-2.9	0.5-1.0	.24	.24	5	4L	86	7s	---
	9-60	10-35	1.25-1.40	0.2-0.6	0.05-0.15	0.0-2.9	0.0-0.5	.24	.24					
81:														
Ravola	0-2	15-27	1.15-1.30	2-6	0.15-0.20	0.0-2.9	1.0-2.0	.37	.37	5	4L	86	6c	3s
	2-47	18-35	1.15-1.30	0.2-0.6	0.15-0.21	3.0-5.9	0.5-1.0	.37	.37					
	47-80	18-35	1.15-1.40	0.2-0.6	0.14-0.21	3.0-5.9	0.5-1.0	.32	.32					
82:														
Ravola	0-10	12-18	1.35-1.45	0.6-2	0.15-0.17	0.0-2.9	0.5-0.9	.55	.55	5	3	86	7c	---
	10-80	18-25	1.40-1.50	0.6-2	0.15-0.18	0.0-2.9	0.3-0.5	.43	.43					
83:														
Redlands	0-6	5-15	1.35-1.50	0.6-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28	5	3	86	6c	2e
	6-22	15-27	1.25-1.40	0.6-6	0.14-0.18	0.0-2.9	0.5-1.0	.37	.37					
	22-41	8-20	1.25-1.50	0.6-6	0.10-0.18	0.0-2.9	0.0-0.5	.37	.37					
	41-80	10-27	1.25-1.40	0.6-6	0.14-0.18	0.0-2.9	0.0-0.0	.43	.43					
84:														
Redlands	0-6	5-15	1.35-1.50	0.6-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28	5	3	86	6c	3e
	6-22	15-27	1.25-1.40	0.6-6	0.14-0.18	0.0-2.9	0.5-1.0	.37	.37					
	22-41	8-20	1.25-1.50	0.6-6	0.10-0.18	0.0-2.9	0.0-0.5	.37	.37					
	41-80	10-27	1.25-1.40	0.6-6	0.14-0.18	0.0-2.9	0.0-0.0	.43	.43					
85:														
Rizno	0-2	15-20	1.15-1.30	2-6	0.13-0.16	0.0-2.9	1.0-2.0	.43	.43	1	3	86	6s	---
	2-9	10-18	1.20-1.40	2-6	0.10-0.13	0.0-2.9	0.5-1.0	.28	.28					
	9-19	---	---	0.00-0.2	---	---	---	---	---					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
85:														
Gapmesa	0-2	8-15	1.35-1.50	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	2	3	86	4e	4e
	2-21	18-27	1.25-1.40	0.6-2	0.10-0.13	0.0-2.9	0.5-1.0	.24	.24					
	21-28	10-20	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.0-0.5	.20	.32					
	28-38	---	---	0.00-0.2	---	---	---	---	---					
86:														
Rock outcrop	0-60	---	---	0.00- 0.01	---	---	---	---	---	--	8	0	8s	---
87:														
Rock outcrop	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
Farview	0-2	5-10	1.35-1.60	2-20	0.04-0.10	0.0-3.0	1.0-2.0	.15	.17	1	3	86	7s	---
	2-5	5-18	1.35-1.50	2-6	0.07-0.10	0.0-3.0	0.5-1.0	.15	.28					
	5-15	---	---	0.00-0.2	---	---	---	---	---					
88:														
Romberg	0-2	15-27	1.25-1.35	0.6-2	0.06-0.09	0.0-2.9	1.0-2.0	.10	.28	5	8	0	7s	---
	2-20	27-35	1.25-1.35	0.2-0.6	0.07-0.08	0.0-2.9	0.5-1.0	.10	.24					
	20-60	18-35	1.35-1.45	0.2-0.6	0.07-0.08	0.0-2.9	0.0-0.5	.10	.24					
Crosscan	0-2	20-35	1.25-1.40	0.6-2	0.06-0.09	0.0-2.9	1.0-2.0	.05	.17	2	8	0	7s	---
	2-18	18-35	1.25-1.40	0.06-0.2	0.07-0.10	0.0-2.9	0.0-0.5	.10	.28					
	18-28	---	---	0.00-0.2	---	---	---	---	---					
89:														
Romberg	0-2	15-27	1.25-1.35	0.6-2	0.06-0.09	0.0-2.9	1.0-2.0	.10	.28	5	8	0	7e	---
	2-20	27-35	1.25-1.35	0.2-0.6	0.07-0.08	0.0-2.9	0.5-1.0	.10	.24					
	20-60	18-35	1.35-1.45	0.2-0.6	0.07-0.08	0.0-2.9	0.0-0.5	.10	.24					
Crosscan	0-2	20-35	1.25-1.40	0.6-2	0.06-0.09	0.0-2.9	1.0-2.0	.05	.17	2	8	0	7e	---
	2-18	18-35	1.25-1.40	0.06-0.2	0.07-0.10	0.0-2.9	0.0-0.5	.10	.28					
	18-28	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop	0-60	---	---	0.00- 0.01	---	---	---	---	---	--	8	0	8s	---
90:														
Roubideau	0-6	10-27	1.30-1.40	0.6-2	0.14-0.18	0.0-2.9	1.0-2.0	.28	.28	2	5	56	3e	---
	6-36	18-35	1.25-1.40	0.2-0.6	0.13-0.19	3.0-5.9	0.5-1.0	.37	.37					
	36-38	18-35	1.25-1.40	0.6-2	0.13-0.15	0.0-2.9	0.0-0.5	.20	.37					
	38-48	---	---	0.00-0.2	---	---	---	---	---					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
91:														
Sharps	0-2	10-20	1.30-1.40	0.6-2	0.13-0.16	0.0-2.9	1.0-2.0	.28	.28	3	5	56	4e	---
	2-12	18-35	1.25-1.35	0.2-0.6	0.15-0.17	3.0-5.9	0.5-1.0	.32	.32					
	12-27	18-35	1.25-1.35	0.6-2	0.13-0.15	0.0-2.9	0.5-1.0	.37	.37					
	27-32	27-35	1.35-1.45	0.2-0.6	0.13-0.15	3.0-5.9	0.0-1.0	.20	.20					
	32-42	---	---	0.00-0.2	---	---	---	---	---					
92:														
Sharps, dry	0-2	10-20	1.30-1.40	0.6-2	0.13-0.16	0.0-2.9	1.0-2.0	.28	.28	3	5	56	4e	---
	2-12	18-35	1.25-1.35	0.2-0.6	0.15-0.17	3.0-5.9	0.5-1.0	.32	.32					
	12-27	18-35	1.25-1.35	0.6-2	0.13-0.15	0.0-2.9	0.5-1.0	.37	.37					
	27-32	27-35	1.35-1.45	0.2-0.6	0.13-0.15	3.0-5.9	0.0-1.0	.20	.20					
	32-42	---	---	0.00-0.2	---	---	---	---	---					
Gapmesa	0-2	8-15	1.35-1.50	2-6	0.13-0.15	0.0-2.9	1.0-2.0	.24	.24	2	3	86	4e	---
	2-21	18-27	1.25-1.40	0.6-2	0.10-0.13	0.0-2.9	0.5-1.0	.24	.24					
	21-28	10-20	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.0-0.5	.20	.32					
	28-38	---	---	0.00-0.2	---	---	---	---	---					
93:														
Sheek	0-1	---	0.20-1.00	14-85	0.15-0.45	---	70-95	---	---	5	8	0	7s	---
	1-5	10-20	1.40-1.50	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20					
	5-60	18-35	1.35-1.45	0.2-0.6	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28					
Archuleta	0-1	0-5	0.20-1.00	14-85	0.15-0.45	---	70-95	---	---	2	8	0	7s	---
	1-6	10-20	1.40-1.50	2-6	0.05-0.07	0.0-2.9	1.0-3.0	.10	.24					
	6-18	18-35	1.25-1.40	0.2-0.6	0.13-0.16	0.0-2.9	0.5-1.0	.15	.28					
	18-28	---	---	0.00-0.2	---	---	---	---	---					
94:														
Sheek	0-1	---	0.20-1.00	14-85	0.15-0.45	---	70-95	---	---	5	8	0	7e	---
	1-5	10-20	1.40-1.50	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20					
	5-60	18-35	1.35-1.45	0.2-0.6	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28					
Archuleta	0-1	0-5	0.20-1.00	14-85	0.15-0.45	---	70-95	---	---	2	8	0	7e	---
	1-6	10-20	1.40-1.50	2-6	0.05-0.07	0.0-2.9	1.0-3.0	.10	.24					
	6-18	18-35	1.25-1.40	0.2-0.6	0.13-0.16	0.0-2.9	0.5-1.0	.15	.28					
	18-28	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop	0-60	---	---	0.00- 0.01	---	---	---	---	---	--	8	0	8s	---
95:														
Sheek	0-1	---	0.20-1.00	14-85	0.15-0.45	---	70-95	---	---	5	8	0	7e	---
	1-5	10-20	1.40-1.50	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20					
	5-60	18-35	1.35-1.45	0.2-0.6	0.09-0.11	0.0-2.9	1.0-2.0	.15	.28					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
95:														
Archuleta	0-1	0-5	0.20-1.00	14-85	0.15-0.45	---	70-95	---	---	2	8	0	7e	---
	1-6	10-20	1.40-1.50	2-6	0.05-0.07	0.0-2.9	1.0-3.0	.10	.24					
	6-18	18-35	1.25-1.40	0.2-0.6	0.13-0.16	0.0-2.9	0.5-1.0	.15	.28					
	18-28	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop	0-60	---	---	0.00- 0.01	---	---	---	---	---	--	8	0	8s	---
96:														
Sheppard	0-7	3-10	1.50-1.60	6-20	0.05-0.07	0.0-2.9	0.0-0.5	.24	.24	5	1	250	6s	---
	7-60	3-10	1.50-1.60	6-20	0.06-0.08	0.0-2.9	0.0-0.5	.28	.28					
97:														
Sideshow	0-3	27-40	1.15-1.30	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.28	.28	5	4L	86	3s	3s
	3-60	35-60	1.20-1.40	0.06-0.2	0.16-0.21	6.0-8.9	0.0-1.0	.24	.24					
98:														
Sideshow	0-3	27-40	1.15-1.30	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.28	.28	5	4L	86	3e	3e
	3-60	35-60	1.20-1.40	0.06-0.2	0.16-0.21	6.0-8.9	0.0-1.0	.24	.24					
99:														
Simpatico	0-12	10-27	1.25-1.35	0.6-2	0.14-0.16	0.0-2.9	1.0-3.0	.28	.28	4	5	56	3c	3e
	12-45	27-35	1.30-1.40	0.2-0.6	0.17-0.21	0.0-2.9	1.0-3.0	.28	.28					
	45-60	10-27	1.35-1.45	0.6-2	0.14-0.18	0.0-2.9	0.5-2.0	.20	.37					
100:														
Snapill	0-3	10-18	1.45-1.55	0.6-2	0.15-0.17	0.0-2.9	0.5-0.9	.55	.55	3	3	86	6c	---
	3-13	18-27	1.40-1.50	0.6-2	0.15-0.17	0.0-2.9	0.5-0.9	.37	.37					
	13-38	18-27	1.40-1.50	0.6-2	0.15-0.17	0.0-2.9	0.5-0.7	.37	.37					
	38-53	12-25	1.40-1.50	0.6-2	0.08-0.12	0.0-2.9	0.3-0.5	.37	.37					
	53-63	---	---	0.00-0.2	---	---	---	---	---					
101:														
Stephouse	0-1	8-18	1.35-1.50	0.6-6	0.09-0.11	0.0-2.9	0.5-1.0	.15	.28	1	3	86	6s	---
	1-12	8-18	1.25-1.50	2-6	0.07-0.09	0.0-2.9	0.0-0.5	.15	.37					
	12-22	---	---	0.00-0.06	---	---	---	---	---					
Rock outcrop	0-60	---	---	0.00- 0.01	---	---	---	---	---	--	8	0	8s	---
102:														
Strych	0-3	8-18	1.45-1.55	2-6	0.03-0.07	0.0-2.9	0.5-1.0	.10	.55	5	8	0	7s	---
	3-15	8-18	1.55-1.65	2-6	0.07-0.11	0.0-2.9	0.5-1.0	.17	.55					
	15-47	8-18	1.55-1.65	2-6	0.06-0.10	0.0-2.9	0.3-0.5	.15	.43					
	47-64	5-18	1.50-1.60	2-6	0.05-0.09	0.0-2.9	0.3-0.5	.10	.43					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
102:														
Eagleye	0-2	30-40	1.20-1.30	0.2-0.6	0.11-0.13	3.0-5.9	0.3-0.5	.10	.37	1	6	48	7e	---
	2-8	35-50	1.45-1.55	0.06-0.2	0.15-0.17	6.0-8.9	0.3-0.5	.37	.37					
	8-18	35-50	1.45-1.55	0.06-0.2	0.07-0.10	6.0-8.9	0.2-0.4	.37	.37					
	18-28	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
103:														
Tocito	0-2	12-18	1.25-1.35	0.6-2	0.15-0.17	0.0-2.9	0.4-0.6	.55	.55	5	3	86	7c	3e
	2-16	25-35	1.40-1.50	0.2-0.6	0.16-0.20	0.0-2.9	0.3-0.5	.32	.32					
	16-80	18-25	1.40-1.50	0.6-2	0.12-0.15	0.0-2.9	0.2-0.5	.43	.43					
Gullied land	0-3	18-27	---	0.6-2	0.19-0.21	0.0-2.9	0.2-0.5	.43	.43	--	4L	86	8s	---
	3-80	18-27	---	0.6-2	0.12-0.15	0.0-2.9	0.2-0.5	.43	.43					
104:														
Tohona	0-1	20-30	1.40-1.50	0.6-2	0.07-0.10	0.0-2.9	0.4-0.6	.10	.32	2	6	48	7c	---
	1-11	40-60	1.35-1.55	0.06-0.2	0.12-0.14	6.0-8.9	0.4-0.6	.20	.20					
	11-33	40-60	1.45-1.55	0.06-0.2	0.08-0.10	6.0-8.9	0.2-0.5	.20	.20					
	33-43	---	---	0.00-0.2	---	---	---	---	---					
Kimnoli	0-4	4-8	1.40-1.50	6-20	0.09-0.10	0.0-2.9	0.3-0.6	.20	.20	1	2	134	7s	---
	4-9	18-25	1.20-1.30	0.6-2	0.12-0.14	3.0-5.9	0.2-0.5	.28	.28					
	9-19	---	---	0.00-0.2	---	---	---	---	---					
Claysprings	0-2	20-30	1.40-1.50	0.6-2	0.03-0.06	3.0-5.9	0.4-0.6	.05	.32	1	8	0	7e	---
	2-5	40-55	1.45-1.55	0.06-0.2	0.13-0.15	6.0-8.9	0.2-0.5	.20	.20					
	5-16	40-55	1.40-1.50	0.00-0.06	0.11-0.13	6.0-8.9	0.2-0.5	.20	.20					
	16-26	---	---	0.00-0.2	---	---	---	---	---					
105:														
Torriorthents	0-4	10-20	1.35-1.45	2-6	0.04-0.06	0.0-2.9	0.5-1.0	.05	.28	3	8	0	7e	---
	4-14	27-35	1.15-1.25	0.2-0.6	0.07-0.08	0.0-2.9	0.0-0.5	.15	.37					
	14-24	---	---	0.00-2	---	---	---	---	---					
106:														
Torriorthents	0-4	27-40	1.15-1.30	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.28	.28	3	8	0	7e	---
	4-14	27-60	1.20-1.40	0.06-0.2	0.16-0.21	6.0-8.9	0.0-1.0	.24	.24					
	14-24	---	---	0.00-2	---	---	---	---	---					
Badland	0-60	---	---	0.00-0.03	---	---	---	---	---	--	8	0	8e	---

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
107:														
Towaoc	0-5	10-20	1.25-1.50	2-6	0.05-0.09	0.0-1.5	1.0-2.0	.10	.28	5	8	0	7e	---
	5-12	10-20	1.25-1.50	2-6	0.05-0.07	0.0-1.5	1.0-2.0	.10	.28					
	12-80	10-27	1.25-1.50	2-6	0.05-0.07	0.0-1.5	0.5-1.0	.10	.28					
Kwiavu	0-9	10-20	1.40-1.50	0.6-6	0.10-0.13	0.0-3.0	1.0-3.0	.15	.28	5	5	56	7e	---
	9-15	15-27	1.40-1.50	0.6-6	0.10-0.13	0.0-3.0	1.0-2.0	.15	.28					
	15-60	22-32	1.40-1.50	0.2-2	0.13-0.16	0.0-3.0	0.5-1.0	.20	.24					
108:														
Towaoc	0-5	5-15	1.25-1.50	2-6	0.05-0.09	0.0-1.5	1.0-2.0	.10	.28	5	8	0	7e	---
	5-12	10-20	1.25-1.50	2-6	0.05-0.07	0.0-1.5	1.0-2.0	.10	.28					
	12-80	10-27	1.25-1.50	2-6	0.05-0.07	0.0-1.5	0.5-1.0	.10	.28					
109:														
Tragmon	0-5	10-20	1.20-1.30	0.6-6	0.09-0.12	0.0-2.9	2.0-4.0	.20	.20	5	3	86	6e	---
	5-11	18-27	1.25-1.40	0.6-2	0.14-0.16	0.0-2.9	2.0-4.0	.24	.24					
	11-40	18-35	1.25-1.40	0.6-2	0.14-0.16	0.0-2.9	1.0-2.0	.28	.28					
	40-60	18-35	1.30-1.40	0.6-2	0.12-0.14	0.0-2.9	0.5-1.0	.28	.28					
Sheek	0-4	10-25	1.25-1.40	0.6-6	0.10-0.13	0.0-2.9	2.0-4.0	.15	.24	5	5	56	7s	---
	4-16	27-35	1.35-1.45	0.2-0.6	0.09-0.11	0.0-2.9	1.0-2.0	.05	.20					
	16-42	27-35	1.25-1.40	0.2-0.6	0.09-0.11	0.0-2.9	1.0-2.0	.05	.20					
	42-60	27-35	1.25-1.40	0.2-0.6	0.10-0.11	0.0-2.9	0.5-1.0	.10	.24					
110:														
Tupuyci	0-2	2-15	1.45-1.65	6-20	0.05-0.07	0.0-2.9	0.0-1.0	.10	.17	5	3	86	7s	7s
	2-80	2-20	1.35-1.60	0.6-20	0.02-0.04	0.0-2.9	0.0-0.5	.05	.24					
Ives	0-1	8-20	1.35-1.50	2-6	0.09-0.12	0.0-2.9	0.5-1.0	.28	.28	5	3	86	6c	3e
	1-80	10-15	1.25-1.60	2-20	0.07-0.10	0.0-2.9	0.0-0.5	.28	.28					
111:														
Typic Torriorthents-	0-3	10-20	1.35-1.45	2-6	0.04-0.06	0.0-2.9	0.5-1.0	.05	.28	3	8	0	7e	---
	3-16	10-35	1.15-1.25	0.2-0.6	0.07-0.09	0.0-2.9	0.0-0.5	.15	.37					
	16-26	---	---	0.00-2	---	0.0-5.9	---	---	---					
Rock outcrop	0-60	---	---	0.00- 0.01	---	---	---	---	---	--	8	0	8s	---
112:														
Ustic Torrifluvents-	0-3	0-15	1.50-1.60	6-20	0.05-0.06	0.0-2.9	0.0-0.5	.24	.24	3	2	134	6s	---
	3-11	0-20	1.50-1.50	2-6	0.13-0.15	0.0-2.9	0.0-0.5	.32	.32					
	11-60	0-20	1.45-1.55	2-6	0.04-0.08	0.0-2.9	0.0-0.5	.10	.28					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
113:														
Ustic Torriorthents-	0-7	18-35	1.25-1.40	0.2-6	0.10-0.20	0.0-5.9	0.5-1.0	.32	.32	3	4L	86	7e	---
	7-60	18-35	1.25-1.40	0.2-2	0.06-0.18	3.0-5.9	0.0-0.5	.28	.28					
Gullied land--------	0-60	---	---	0.06-0.2	---	---	---	---	---	--	8	0	8e	---
114:														
Uzacol--------------	0-5	27-35	1.35-1.40	0.2-0.6	0.17-0.21	3.0-5.9	1.0-2.0	.20	.20	2	4L	86	6s	---
	5-45	35-60	1.30-1.40	0.06-0.2	0.15-0.17	6.0-8.9	0.0-0.5	.24	.24					
	45-59	35-55	1.35-1.40	0.06-0.2	0.15-0.19	6.0-8.9	0.0-0.5	.28	.28					
	59-69	---	---	0.00-0.2	---	---	---	---	---					
Zwicker-------------	0-1	27-40	1.30-1.40	0.2-0.6	0.13-0.16	3.0-5.9	1.0-2.0	.10	.20	3	4L	86	6s	---
	1-4	27-40	1.30-1.40	0.2-0.6	0.16-0.20	3.0-5.9	0.5-1.0	.24	.24					
	4-32	35-60	1.35-1.40	0.06-0.2	0.14-0.19	6.0-8.9	0.0-0.5	.20	.20					
	32-42	---	---	0.00-0.2	---	---	---	---	---					
Claysprings---------	0-3	27-35	1.25-1.40	0.2-0.6	0.10-0.12	0.0-2.9	0.0-0.5	.10	.28	2	8	0	7s	---
	3-18	35-60	1.20-1.35	0.06-0.2	0.16-0.18	6.0-8.9	0.0-0.5	.28	.28					
	18-28	---	---	0.00-0.02	---	---	---	---	---					
115:														
Uzona---------------	0-2	20-27	1.15-1.30	0.2-0.6	0.15-0.20	3.0-5.9	0.0-0.5	.49	.49	5	4L	86	7s	---
	2-22	40-50	1.15-1.30	0.2-0.6	0.14-0.16	6.0-8.9	0.0-0.5	.17	.17					
	22-80	40-70	1.15-1.30	0.00-0.2	0.12-0.17	6.0-8.9	0.0-0.5	.20	.20					
116:														
Vessilla------------	0-3	10-16	1.40-1.50	2-6	0.10-0.12	0.0-2.9	0.5-1.0	.15	.28	1	5	56	7s	---
	3-8	12-18	1.40-1.50	2-6	0.11-0.13	0.0-2.9	0.5-1.0	.20	.28					
	8-18	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop--------	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
117:														
Vosburg-------------	0-15	8-20	1.40-1.55	2-6	0.13-0.15	0.0-2.9	2.0-3.0	.24	.24	5	3	86	4e	4e
	15-60	18-35	1.30-1.40	0.6-2	0.14-0.20	0.0-2.9	1.0-2.0	.24	.24					
118:														
Water---------------	0-60	---	---	---	---	---	---	---	---	--	---	---	---	---
119:														
Water---------------	---	---	---	---	---	---	---	---	---	--	---	---	---	---
Riverwash-----------	0-6	0-1	---	6-20	0.01-0.02	0.0-2.9	0.0-0.1	.02	.10	--	8	0	8s	---
	6-60	0-1	---	6-20	0.02-0.03	0.0-2.9	---	.05	.10					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
120:														
Wauquie	0-2	15-27	1.25-1.35	2-6	0.07-0.09	0.0-2.9	1.0-2.0	.10	.28	5	8	0	7e	---
	2-20	15-27	1.30-1.45	0.6-2	0.05-0.09	0.0-2.9	0.5-1.0	.10	.28					
	20-60	20-27	1.25-1.40	0.6-2	0.07-0.09	0.0-2.9	0.0-0.5	.15	.43					
121:														
Wauquie	0-2	10-20	1.35-1.50	2-6	0.10-0.11	0.0-2.9	1.0-2.0	.15	.24	5	3	86	7e	---
	2-6	15-27	1.30-1.40	0.6-2	0.07-0.09	0.0-2.9	0.5-1.0	.15	.37					
	6-22	18-35	1.30-1.40	0.6-2	0.07-0.09	0.0-2.9	0.5-1.0	.15	.24					
	22-60	20-35	1.25-1.40	0.6-2	0.07-0.11	0.0-2.9	0.0-1.0	.15	.24					
Dolcan	0-2	8-20	1.25-1.35	0.6-2	0.03-0.07	0.0-2.9	1.0-2.0	.05	.28	2	8	0	7s	---
	2-11	20-35	1.25-1.40	0.2-0.6	0.16-0.19	0.0-2.9	0.0-1.0	.15	.24					
	11-21	---	---	0.00-0.02	---	---	---	---	---					
122:														
Wauquie	0-2	10-20	1.35-1.50	2-6	0.10-0.11	0.0-2.9	1.0-2.0	.15	.24	5	3	86	7e	---
	2-6	15-27	1.30-1.40	0.6-2	0.07-0.09	0.0-2.9	0.5-1.0	.15	.37					
	6-22	18-35	1.30-1.40	0.6-2	0.07-0.09	0.0-2.9	0.5-1.0	.15	.24					
	22-60	20-35	1.25-1.40	0.6-2	0.07-0.11	0.0-2.9	0.0-1.0	.15	.24					
Dolcan	0-2	8-20	1.25-1.35	0.6-2	0.03-0.07	0.0-2.9	1.0-2.0	.05	.28	2	8	0	7e	---
	2-11	20-35	1.25-1.40	0.2-0.6	0.16-0.19	0.0-2.9	0.0-1.0	.15	.24					
	11-21	---	---	0.00-0.02	---	---	---	---	---					
Rock outcrop	0-60	---	---	0.00- 0.01	---	---	---	---	---	--	8	0	8s	---
123:														
Wetherill	0-3	15-18	1.35-1.45	0.6-2	0.15-0.17	0.0-2.9	1.0-2.0	.55	.55	5	3	86	6e	---
	3-18	20-30	1.35-1.45	0.6-2	0.17-0.20	0.0-2.9	0.5-1.0	.32	.32					
	18-42	20-30	1.40-1.50	0.6-2	0.16-0.20	0.0-2.9	0.3-0.5	.32	.32					
	42-70	18-25	1.40-1.50	0.6-2	0.15-0.17	0.0-2.9	0.3-0.5	.32	.32					
Atlatl	0-2	15-18	1.35-1.45	2-6	0.10-0.13	0.0-2.9	1.0-2.0	.15	.28	2	5	56	4c	---
	2-17	15-20	1.40-1.50	2-6	0.12-0.17	0.0-2.9	0.5-2.0	.32	.32					
	17-30	10-18	1.50-1.60	0.6-2	0.12-0.17	0.0-2.9	0.4-0.6	.32	.32					
	30-40	---	---	0.00-0.2	---	---	---	---	---					
124:														
Wetherill	0-9	10-20	1.40-1.50	0.6-2	0.15-0.20	0.0-3.0	1.0-2.0	.37	.37	5	5	56	3e	---
	9-21	18-35	1.40-1.60	0.6-2	0.15-0.20	0.0-3.0	0.5-1.0	.43	.43					
	21-43	15-30	1.40-1.60	0.6-2	0.15-0.18	3.0-6.0	0.5-1.0	.43	.43					
	43-80	10-25	1.40-1.60	0.6-2	0.15-0.18	0.0-3.0	0.5-1.0	.43	.43					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
124:														
Kucu----------	0-2	10-20	1.25-1.40	2-6	0.13-0.16	0.0-3.0	1.0-2.0	.28	.28	2	4L	86	6s	---
	2-15	20-35	1.25-1.40	0.6-2	0.13-0.19	0.0-3.0	0.5-1.0	.28	.28					
	15-38	10-20	1.25-1.50	0.6-6	0.05-0.09	0.0-3.0	0.0-1.0	.10	.28					
	38-80	5-15	1.25-1.60	2-20	0.02-0.04	0.0-3.0	0.0-1.0	.10	.20					
125:														
Wetherill----------	0-3	10-27	1.25-1.40	0.6-2	0.15-0.18	0.0-2.9	0.5-2.0	.37	.37	5	5	56	3e	3e
	3-7	18-35	1.25-1.50	0.2-0.6	0.14-0.16	3.0-5.9	0.5-1.0	.37	.37					
	7-48	18-35	1.40-1.55	0.2-0.6	0.18-0.21	3.0-5.9	0.5-1.0	.37	.37					
	48-60	18-25	1.25-1.40	0.6-2	0.11-0.15	0.0-2.9	0.0-0.5	.37	.37					
126:														
Wetherill----------	0-9	10-20	1.40-1.50	0.6-2	0.15-0.20	0.0-3.0	1.0-2.0	.37	.37	5	5	56	3c	3c
	9-21	15-35	1.40-1.60	0.2-2	0.15-0.20	3.0-6.0	0.5-1.0	.43	.43					
	21-43	15-35	1.40-1.60	0.2-2	0.15-0.20	3.0-6.0	0.5-1.0	.43	.43					
	43-80	15-30	1.40-1.60	0.2-2	0.15-0.20	3.0-6.0	0.0-1.0	.43	.43					
127:														
Wetherill----------	0-9	10-20	1.40-1.50	0.6-2	0.15-0.20	0.0-3.0	1.0-2.0	.37	.37	5	5	56	3e	3e
	9-21	15-35	1.40-1.60	0.2-2	0.15-0.20	3.0-6.0	0.5-1.0	.43	.43					
	21-43	15-35	1.40-1.60	0.2-2	0.15-0.20	3.0-6.0	0.5-1.0	.43	.43					
	43-80	15-30	1.40-1.60	0.2-2	0.15-0.20	3.0-6.0	0.0-1.0	.43	.43					
128:														
Wetherill----------	0-9	10-20	1.40-1.50	0.6-2	0.15-0.20	0.0-3.0	1.0-2.0	.37	.37	5	5	56	4e	4e
	9-21	15-35	1.40-1.60	0.2-2	0.15-0.20	3.0-6.0	0.5-1.0	.43	.43					
	21-43	15-35	1.40-1.60	0.2-2	0.15-0.20	3.0-6.0	0.5-1.0	.43	.43					
	43-80	15-30	1.40-1.60	0.2-2	0.15-0.20	3.0-6.0	0.0-1.0	.43	.43					
129:														
Wetherill----------	0-9	10-20	1.40-1.50	0.6-2	0.15-0.20	0.0-3.0	1.0-2.0	.37	.37	5	5	56	4e	---
	9-21	18-35	1.40-1.60	0.6-2	0.15-0.20	0.0-3.0	0.5-1.0	.43	.43					
	21-43	15-30	1.40-1.60	0.6-2	0.15-0.18	3.0-6.0	0.5-1.0	.43	.43					
	43-80	10-25	1.40-1.60	0.6-2	0.15-0.18	0.0-3.0	0.5-1.0	.43	.43					
Wetoe----------	0-7	5-20	1.15-1.30	0.3-0.9	0.08-0.10	0.0-0.3	1.0-2.0	.15	.37	5	8	0	7s	---
	7-40	15-27	1.25-1.40	0.03-0.3	0.07-0.11	0.0-0.3	0.5-1.0	.15	.37					
	40-60	10-20	1.35-1.50	0.09-0.9	0.05-0.06	0.0-0.3	0.2-0.5	.10	.24					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
130:														
Wetoe	0-8	10-20	1.25-1.50	2-6	0.05-0.09	0.0-3.0	1.0-2.0	.10	.28	5	8	0	7e	---
	8-60	10-27	1.25-1.50	0.06-6	0.03-0.06	0.0-3.0	0.5-1.0	.05	.24					
Nees	0-3	10-20	1.25-1.50	0.6-6	0.03-0.07	0.0-3.0	1.0-2.0	.05	.24	1	8	0	7e	---
	3-11	15-27	1.25-1.50	0.6-2	0.03-0.05	0.0-3.0	0.5-1.0	.05	.24					
	11-15	---	---	0.00-0.2	---	---	---	---	---					
Rock outcrop	0-80	---	---	0.00-0.2	---	---	---	---	---	--	8	0	8s	---
131:														
Yarts	0-9	8-18	1.35-1.45	2-6	0.13-0.15	0.0-2.9	0.5-1.0	.28	.28	5	3	86	4c	3e
	9-13	8-18	1.35-1.45	2-6	0.11-0.14	0.0-2.9	0.5-1.0	.28	.28					
	13-60	8-18	1.35-1.45	2-6	0.11-0.12	0.0-2.9	0.5-1.0	.28	.28					
132:														
Yogovuci	0-2	10-20	1.35-1.50	2-6	0.14-0.17	0.0-2.9	1.0-1.5	.28	.28	5	3	86	6c	4s
	2-6	10-25	1.25-1.50	0.6-6	0.14-0.19	0.0-2.9	0.5-1.0	.32	.32					
	6-13	27-40	1.25-1.40	0.06-0.6	0.17-0.20	3.0-5.9	0.5-1.0	.32	.32					
	13-35	18-35	1.25-1.40	0.2-2	0.13-0.19	3.0-5.9	0.0-0.5	.32	.32					
	35-75	10-50	1.15-1.60	0.06-20	0.05-0.19	0.0-5.9	0.0-0.5	.20	.20					
	75-80	5-20	1.35-1.60	0.06-20	0.02-0.05	0.0-2.9	0.0-0.5	.32	.32					
Taqoci	0-9	8-15	1.35-1.50	2-6	0.14-0.16	0.0-2.9	1.0-2.0	.28	.28	5	3	86	6c	4s
	9-26	18-35	1.25-1.40	0.2-2	0.14-0.18	0.0-2.9	0.5-1.0	.37	.37					
	26-37	18-27	1.25-1.50	0.6-2	0.13-0.16	0.0-2.9	0.5-1.0	.32	.32					
	37-80	5-27	1.25-1.50	0.6-6	0.05-0.09	0.0-2.9	0.0-0.5	.15	.28					
133:														
Zigzag	0-1	27-40	1.30-1.35	0.2-0.6	0.08-0.10	0.0-2.9	0.0-1.0	.10	.24	2	8	0	7e	---
	1-5	27-40	1.30-1.40	0.06-0.6	0.16-0.19	3.0-5.9	0.0-1.0	.24	.24					
	5-19	35-55	1.30-1.40	0.06-0.2	0.15-0.19	6.0-8.9	0.0-0.5	.28	.28					
	19-29	---	---	0.00-0.2	---	---	---	---	---					
Sideshow	0-3	27-40	1.15-1.30	0.2-0.6	0.18-0.20	3.0-5.9	1.0-2.0	.28	.28	5	4L	86	7e	---
	3-60	35-60	1.20-1.40	0.06-0.2	0.16-0.21	6.0-8.9	0.0-1.0	.24	.24					
134:														
Zyme	0-2	27-40	1.30-1.35	0.2-0.6	0.12-0.14	3.0-5.9	1.0-2.0	.10	.20	2	4L	86	6s	---
	2-12	35-45	1.30-1.40	0.06-0.2	0.15-0.17	3.0-5.9	0.5-1.0	.24	.24					
	12-22	---	---	0.00-0.2	---	---	---	---	---					

Table 13.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	Capability Class	
								Kw	Kf	T			NIRR	IRR
	In	Pct	g/cc	In/hr	In/in	Pct	Pct							
135:														
Zyme	0-4	27-40	1.35-1.40	0.2-0.6	0.08-0.10	3.0-5.9	1.0-2.0	.20	.20	2	8	0	7e	---
	4-18	35-45	1.30-1.40	0.06-0.2	0.15-0.17	3.0-5.9	0.5-1.0	.24	.24					
	18-28	---	---	0.00-0.2	---	---	---	---	---					
Katzine, dry	0-2	10-20	1.25-1.50	0.06-6	0.05-0.08	0.0-3.0	1.0-2.0	.15	.28	5	8	0	7s	---
	2-12	10-18	1.25-1.50	0.06-6	0.05-0.08	0.0-3.0	1.0-2.0	.15	.28					
	12-80	10-18	1.25-1.50	0.06-6	0.03-0.06	0.0-3.0	0.5-1.0	.15	.32					
136:														
Zyme	0-2	27-40	1.30-1.35	0.2-0.6	0.08-0.10	0.0-2.9	1.0-2.0	.05	.20	2	8	0	7e	---
	2-12	35-45	1.30-1.40	0.06-0.2	0.15-0.17	3.0-5.9	0.5-1.0	.24	.24					
	12-22	---	---	0.00-0.2	---	---	---	---	---					

Table 14.--Chemical Soil Properties

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
1:							
Arabrab	0-4	3.0-15	6.6-7.8	0	0	0	0
	4-13	10-25	6.6-8.4	0-2	0	0	0
	13-16	10-25	6.6-8.4	1-5	0	0.0-2.0	0
	16-26	---	---	---	---	---	---
Longburn	0-1	5.0-15	6.6-7.8	0	0	0	0
	1-4	5.0-15	6.6-7.8	0	0	0	0
	4-17	10-25	7.4-7.8	0-5	0	0	0
	17-27	---	---	---	---	---	---
2:							
Awitava	0-1	5.0-15	7.9-8.4	5-15	0	0.0-2.0	0-2
	1-4	5.0-15	7.9-8.4	5-15	0	0.0-2.0	0-2
	4-10	2.0-15	7.9-8.4	15-50	0	0.0-2.0	0-2
	10-21	2.0-10	7.9-8.4	40-80	0	0.0-2.0	0-2
	21-80	2.0-10	7.9-8.4	15-50	0-1	0.0-2.0	0-2
3:							
Badland	0-60	---	---	---	---	---	---
Rock outcrop	0-80	---	---	---	---	---	---
4:							
Barx	0-3	5.0-15	6.6-8.4	0-2	0	0	0
	3-31	10-15	6.6-8.4	0-5	0	0	0
	31-60	5.0-15	7.9-9.0	15-30	0	0	0-5
Gapmesa	0-2	5.0-15	6.6-7.3	0-3	0	0	0
	2-21	10-20	7.4-8.4	0-5	0	0	0
	21-28	5.0-20	7.4-8.4	5-10	0	0.0-2.0	0
	28-38	---	---	---	---	---	---
5:							
Barx	0-3	5.0-15	6.6-8.4	0-2	0	0	0
	3-31	10-15	6.6-8.4	0-5	0	0	0
	31-80	5.0-15	7.9-9.0	15-30	0	0	0-5
6:							
Barx	0-3	5.0-10	7.4-8.4	0	0	0	0-5
	3-9	5.0-10	7.4-8.4	0	0	0	0-5
	9-23	10-20	7.4-8.4	0-3	0	0	0-5
	23-36	10-20	7.9-8.4	3-15	0	0.0-2.0	0-5
	36-55	5.0-15	7.9-9.0	15-40	0	0.0-2.0	0-5
	55-60	5.0-15	7.9-9.0	15-40	0	0.0-2.0	0-5
7:							
Battlerock	0-10	10-20	7.4-8.4	0-5	0	0.0-4.0	0
	10-60	5.0-20	7.4-8.4	4-15	0	0.0-4.0	0

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
8:							
Battlerock, saline-sodic	0-1	5.0-20	7.4-8.4	1-5	0-2	1.0-16.0	5-13
	1-14	10-25	8.4-9.0	1-5	0-2	4.0-16.0	13-30
	14-80	10-20	7.9-8.4	1-5	0-5	4.0-16.0	5-13
9:							
Battlerock, slightly saline-sodic	0-3	15-35	7.9-8.4	5-15	0-2	1.0-8.0	0-13
	3-6	15-30	7.9-8.4	5-20	0-2	1.0-8.0	0-13
	6-80	5.0-30	7.9-8.4	5-20	0-5	1.0-8.0	0-13
10:							
Bebeevar	0-4	1.0-1.0	7.4-8.4	1-3	0	2.0-4.0	0-5
	4-70	1.0-1.0	7.4-8.4	1-5	0	2.0-4.0	0-5
Walrees	0-4	10-15	7.9-8.4	1-3	0	4.0-8.0	0-5
	4-30	10-15	7.9-8.4	2-5	0	4.0-8.0	0-5
	30-62	0.0-1.0	7.9-8.4	0-1	0	2.0-4.0	0-5
11:							
Benally	0-3	5.0-10	7.4-7.8	3-5	0-1	2.0-4.0	5-13
	3-14	10-15	7.9-9.0	5-10	0-5	4.0-8.0	13-50
	14-41	15-20	8.5-9.0	3-5	5-10	16.0-25.0	30-50
	41-65	15-20	7.9-8.4	3-5	5-10	16.0-25.0	50-80
12:							
Blackston	0-3	5.0-10	7.9-8.4	1-5	0	0.0-2.0	0-5
	3-9	5.0-10	7.9-9.0	5-10	0	0.0-2.0	5-13
	9-15	10-20	7.9-9.0	10-15	0	2.0-4.0	5-13
	15-35	5.0-10	7.9-8.4	5-10	0	2.0-4.0	0-5
	35-70	0.0-1.0	7.9-8.4	1-5	0	0.0-2.0	0-1
Camac	0-3	5.0-10	7.9-8.4	5-10	0	0.0-4.0	0-5
	3-17	5.0-15	7.9-9.0	5-15	0	0.0-4.0	0-5
	17-31	10-20	7.9-9.0	10-15	0-1	4.0-8.0	5-13
	31-41	---	---	---	---	---	---
Rock outcrop	0-80	---	---	---	---	---	---
13:							
Bluechief	0-6	5.0-10	7.4-7.8	1-2	0	0.0-2.0	0-3
	6-23	5.0-15	7.9-8.4	5-15	0	0.0-2.0	0-3
	23-29	5.0-10	7.9-8.4	15-40	0-1	0.0-4.0	0-5
	29-39	---	---	---	---	---	---
14:							
Bluechief	0-6	5.0-10	7.4-7.8	1-2	0	0.0-2.0	0-3
	6-23	5.0-15	7.9-8.4	5-15	0	0.0-2.0	0-3
	23-29	5.0-10	7.9-8.4	15-40	0-1	0.0-4.0	0-5
	29-39	---	---	---	---	---	---

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
15:							
Bluechief	0-6	5.0-10	7.4-7.8	1-2	0	0.0-2.0	0-3
	6-23	5.0-15	7.9-8.4	5-15	0	0.0-2.0	0-3
	23-29	5.0-10	7.9-8.4	15-40	0-1	0.0-4.0	0-5
	29-39	---	---	---	---	---	---
Rock outcrop	0-80	---	---	---	---	---	---
16:							
Cahona	0-7	5.0-15	6.6-7.8	0-1	0	0	0
	7-30	10-20	7.4-8.4	1-10	0	0	0
	30-45	10-20	7.4-8.4	15-50	0	0	0
	45-60	5.0-15	7.4-9.0	15-50	0	0.0-2.0	0-4
Pulpit	0-3	5.0-20	6.6-7.8	0-1	0	0	0
	3-10	10-25	6.6-8.4	0-5	0	0	0
	10-24	5.0-20	7.4-8.4	5-10	0	0.0-2.0	0
	24-34	---	---	---	---	---	---
17:							
Cahona	0-2	5.0-30	6.6-7.8	0-1	0	0	0
	2-36	4.0-15	7.4-8.4	0-15	0	0	0
	36-60	2.0-10	7.4-8.4	15-30	0	0	0-4
Zigzag	0-3	15-30	7.4-8.4	1-5	0	0.0-2.0	0-10
	3-13	15-30	7.4-8.4	1-5	0	0.0-2.0	0
	13-23	---	---	---	---	---	---
18:							
Camac	0-3	5.0-10	7.9-8.4	5-10	0	0.0-4.0	0-5
	3-16	5.0-15	7.9-9.0	5-15	0	0.0-4.0	0-5
	16-34	10-20	7.9-9.0	10-15	0-1	4.0-8.0	5-13
	34-44	---	---	---	---	---	---
Kimbeto	0-2	5.0-10	7.4-7.8	3-5	0	0.0-2.0	0-5
	2-10	10-15	7.9-9.0	5-10	0	2.0-4.0	0-5
	10-54	10-15	7.9-9.0	10-30	0-2	4.0-16.0	5-30
	54-80	10-15	7.4-8.4	5-15	2-5	8.0-16.0	13-30
Badland	0-80	---	---	---	---	---	---
19:							
Chimrock, sodic	0-5	10-20	7.9-8.4	5-15	0-1	1.0-4.0	1-13
	5-17	10-20	7.9-8.4	10-20	1-3	2.0-8.0	1-13
	17-68	10-20	8.5-9.0	15-30	1-3	4.0-16.0	13-30
	68-80	15-30	8.5-9.0	5-30	1-3	4.0-16.0	13-30
20:							
Chimrock	0-15	5.0-15	7.9-8.4	5-10	0-2	0.0-2.0	0-13
	15-32	5.0-20	7.9-8.4	5-15	0-3	0.0-2.0	0-13
	32-80	5.0-20	7.9-8.4	1-10	1-10	8.0-16.0	0-13

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
21:							
Claysprings	0-2	10-15	7.4-7.8	3-5	0	0.0-2.0	0
	2-4	20-30	8.5-9.0	3-5	0	2.0-8.0	13-30
	4-12	20-30	7.9-9.0	1-3	2-5	4.0-16.0	13-30
	12-22	---	---	---	---	---	---
Badland	0-80	---	---	---	---	---	---
22:							
Claysprings	0-3	10-35	7.9-9.2	1-15	0-5	0.0-4.0	0-10
	3-18	20-40	7.9-9.2	1-15	0-10	0.0-4.0	0-20
	18-28	---	---	---	---	---	---
23:							
Cowboy	0-9	25-50	7.9-8.4	5-15	0-3	1.0-4.0	0-3
	9-80	20-50	7.9-8.4	5-15	1-15	4.0-8.0	0-3
24:							
Cowboy	0-5	25-50	7.9-8.4	1-5	1-5	0.0-2.0	0-10
	5-61	20-40	7.9-8.4	1-15	2-15	4.0-8.0	5-25
	61-71	---	---	---	---	---	---
Kava	0-2	20-30	7.9-8.4	1-5	1-5	2.0-4.0	0-13
	2-5	30-45	7.9-8.4	1-5	1-5	2.0-4.0	0-13
	5-15	30-45	7.9-8.4	1-5	1-5	4.0-8.0	0-13
	15-25	---	---	---	---	---	---
25:							
Cowboy	0-5	25-50	7.9-8.4	1-5	1-5	0.0-2.0	0-10
	5-61	20-40	7.9-8.4	1-15	2-15	4.0-8.0	5-25
	61-71	---	---	---	---	---	---
Kava	0-2	20-30	7.9-8.4	1-5	1-5	2.0-4.0	0-13
	2-5	30-45	7.9-8.4	1-5	1-5	2.0-4.0	0-13
	5-15	30-45	7.9-8.4	1-5	1-5	4.0-8.0	0-13
	15-25	---	---	---	---	---	---
26:							
Decorock	0-5	15-35	7.4-7.8	10-15	1-5	0.0-2.0	0-1
	5-10	15-30	7.9-8.4	10-15	1-5	0.0-2.0	0-1
	10-15	25-40	7.9-8.4	10-15	1-5	0.0-2.0	0-1
	15-26	20-35	7.9-8.4	10-20	1-5	0.0-2.0	0-1
	26-58	25-45	7.9-8.4	10-15	5-10	4.0-8.0	0-1
	58-68	---	---	---	---	---	---
Salamander	0-3	5.0-15	7.4-7.8	1-5	0-1	0.0-2.0	0-3
	3-10	10-20	7.9-8.4	10-60	0-1	0.0-2.0	0-3
	10-27	2.0-20	7.9-8.4	10-60	0-5	0.0-2.0	0-3
	27-35	2.0-20	7.9-8.4	15-40	15-40	0.0-2.0	0-3
	35-50	1.0-10	7.9-8.4	5-15	15-40	4.0-8.0	0-3
	50-80	1.0-10	7.9-8.4	5-15	15-40	4.0-8.0	0-3

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
27:							
Decorock	0-5	15-35	7.4-7.8	10-15	1-5	0.0-2.0	0-1
	5-10	15-30	7.9-8.4	10-15	1-5	0.0-2.0	0-1
	10-15	25-40	7.9-8.4	10-15	1-5	0.0-2.0	0-1
	15-26	20-35	7.9-8.4	10-20	1-5	0.0-2.0	0-1
	26-58	25-45	7.9-8.4	10-15	5-10	4.0-8.0	0-1
	58-68	---	---	---	---	---	---
Salamander	0-3	5.0-15	7.4-7.8	1-5	0-1	0.0-2.0	0-3
	3-10	10-20	7.9-8.4	10-60	0-1	0.0-2.0	0-3
	10-27	2.0-20	7.9-8.4	10-60	0-5	0.0-2.0	0-3
	27-35	2.0-20	7.9-8.4	15-40	15-40	0.0-2.0	0-3
	35-50	1.0-10	7.9-8.4	5-15	15-40	4.0-8.0	0-3
	50-80	1.0-10	7.9-8.4	5-15	15-40	4.0-8.0	0-3
Badland	0-80	---	---	---	---	---	---
28:							
Dolcan	0-3	5.0-15	7.4-7.8	0-2	0	0	0
	3-6	10-20	7.4-8.4	0-5	0	0	0
	6-10	10-20	7.4-8.4	0-5	0	0	0
	10-20	---	---	---	---	---	---
Kucu	0-2	5.0-15	6.6-7.8	0-5	0-1	0.0-2.0	0
	2-15	10-20	6.6-7.8	0-5	0-1	0.0-2.0	0
	15-38	2.0-10	7.9-8.4	30-80	0-5	0.0-6.0	0-5
	38-80	2.0-10	7.9-8.4	1-15	0-5	0.0-2.0	0-5
29:							
Elias	0-6	5.0-20	7.4-8.4	1-5	0-3	1.0-5.0	5-10
	6-39	5.0-20	8.5-9.0	2-10	1-5	2.0-12.0	13-50
	39-80	2.0-15	8.5-9.0	2-15	1-5	2.0-12.0	13-50
Yarts	0-3	5.0-15	7.4-8.4	1-5	0	0	0
	3-11	3.0-15	7.4-8.4	1-5	0	0	0
	11-60	5.0-10	7.4-9.0	1-5	0	0	0
30:							
Farb	0-3	5.0-15	7.4-8.4	1-15	0	0	0
	3-16	1.0-15	7.4-8.4	1-15	0	0.0-2.0	0
	16-26	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---
31:							
Farb	0-1	5.0-15	7.4-8.4	5-15	0	0.0-2.0	0-3
	1-12	5.0-10	7.4-8.4	5-15	0	0.0-2.0	0-3
	12-22	---	---	---	---	---	---
Rock outcrop	0-80	---	---	---	---	---	---
Fruitland	0-4	5.0-15	7.4-8.4	1-5	0	0	0
	4-60	5.0-10	7.4-8.4	1-5	0	0.0-4.0	0-5

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
32:							
Fardraw	0-9	10-25	6.6-7.8	0	0	0	0
	9-13	10-25	6.6-7.8	0	0	0	0
	13-80	20-40	6.6-7.8	0	0	0	0
33:							
Farview	0-2	5.0-10	7.4-8.4	5-10	0	0.0-2.0	0-1
	2-6	5.0-10	7.9-8.4	15-20	0	2.0-4.0	0-1
	6-16	---	---	---	---	---	---
Beclabito	0-4	5.0-10	7.9-8.4	5-10	0	0.0-2.0	0-5
	4-14	10-15	8.5-9.0	5-10	0	2.0-4.0	5-13
	14-36	10-15	8.5-9.0	15-30	0	4.0-8.0	5-30
	36-45	5.0-15	8.5-9.0	5-20	0	8.0-16.0	13-30
	45-56	15-25	8.5-9.0	5-20	0	8.0-16.0	13-30
	56-66	---	---	---	---	---	---
Rock outcrop	0-80	---	---	---	---	---	---
34:							
Farview	0-2	5.0-10	7.4-8.4	5-10	0	0.0-2.0	0-1
	2-9	5.0-10	7.9-8.4	15-20	0	2.0-4.0	0-1
	9-19	---	---	---	---	---	---
Rock outcrop	0-80	---	---	---	---	---	---
35:							
Fluvents	0-6	---	7.4-8.4	---	---	---	---
	6-60	0.0-5.0	7.4-8.4	0-5	0	0	0
Fluvaquents	0-8	5.0-30	6.6-7.8	0	0	0	0
	8-60	0.0-10	6.6-7.8	0	0	0	0
36:							
Gladel	0-3	5.0-15	7.4-8.4	0-5	0	0	0
	3-11	5.0-15	7.9-8.4	2-15	0	0.0-2.0	0
	11-18	5.0-15	7.9-8.4	2-5	0	0.0-2.0	0
	18-28	---	---	---	---	---	---
Pulpit	0-3	5.0-20	6.6-7.8	0-1	0	0	0
	3-10	10-25	6.6-8.4	0-5	0	0	0
	10-24	5.0-20	7.4-8.4	5-10	0	0.0-2.0	0
	24-34	---	---	---	---	---	---
37:							
Greycap	0-2	5.0-15	7.9-8.4	30-45	0-2	0.0-2.0	0
	2-6	10-20	7.9-8.4	45-65	0-2	0.0-2.0	0
	6-16	---	---	---	---	---	---
Nomad	0-2	4.0-10	7.9-8.4	25-35	0-2	0.0-2.0	0-1
	2-14	2.0-10	7.9-8.4	35-50	0-5	0.0-2.0	0-1
	14-21	4.0-10	7.9-8.4	45-60	1-5	0.0-2.0	0-1
	21-30	10-20	7.9-8.4	45-60	1-5	0.0-2.0	0-1
	30-40	---	---	---	---	---	---

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
38:							
Gypsey	0-3	10-25	7.9-8.4	1-15	0-5	0.0-4.0	0-3
	3-9	10-25	7.9-8.4	15-35	0-5	0.0-4.0	0-3
	9-28	10-30	7.9-8.4	2-25	15-35	2.0-8.0	0-3
	28-38	---	---	---	1-5	---	---
39:							
Gypsey	0-3	10-25	7.9-8.4	1-15	0-5	0.0-4.0	0-3
	3-9	10-25	7.9-8.4	15-35	0-5	0.0-4.0	0-3
	9-28	10-30	7.9-8.4	2-25	15-35	2.0-8.0	0-3
	28-38	---	---	---	---	---	---
40:							
Herm	0-12	15-30	6.6-7.8	0	0	0	0
	12-15	15-30	6.6-7.8	0	0	0	0
	15-73	20-40	6.6-7.8	0	0	0	0
41:							
Hope	0-3	10-25	7.9-8.4	10-25	1-5	0.0-2.0	0-3
	3-10	5.0-20	7.9-8.4	10-25	1-5	0.0-2.0	0-3
	10-80	5.0-20	7.9-8.4	20-40	5-25	2.0-4.0	0-3
42:							
Hoskay	0-2	10-15	7.9-8.4	5-10	1-5	2.0-4.0	0-5
	2-6	15-25	8.5-9.0	5-10	0-1	2.0-4.0	13-30
	6-14	15-25	7.9-9.0	5-10	5-10	4.0-8.0	13-30
	14-27	15-25	7.4-8.4	5-10	15-25	8.0-16.0	5-30
	27-65	15-25	7.9-8.4	5-10	5-10	8.0-16.0	5-30
Patel	0-2	15-20	7.9-8.4	5-10	0-1	0.0-2.0	0-5
	2-12	20-25	8.5-9.0	5-20	0-1	2.0-4.0	13-30
	12-16	20-25	8.5-9.0	5-15	0-2	8.0-16.0	13-30
	16-33	15-20	7.4-8.4	5-10	5-15	8.0-16.0	13-30
	33-43	---	---	---	---	---	---
Badland	0-60	---	---	---	---	---	---
43:							
Ives	0-1	5.0-15	8.5-9.0	0-10	0	0.0-4.0	0-3
	1-80	5.0-15	7.9-8.4	1-10	0-3	0.0-4.0	0-3
44:							
Jeddito	0-9	2.0-7.0	7.9-8.4	0-5	0	0.0-4.0	0-2
	9-27	3.0-9.0	7.9-9.0	0-5	0	4.0-8.0	0-2
	27-60	4.0-10	7.9-9.0	0-5	0	4.0-8.0	0-2
Escavada	0-4	2.0-10	7.4-8.4	1-5	0	0.0-2.0	0-5
	4-80	1.0-1.0	7.4-9.0	1-5	0	4.0-8.0	0-5
45:							
Jeddito	0-5	2.0-5.0	7.4-8.4	1-3	0	0.0-2.0	0-5
	5-16	2.0-5.0	7.4-8.4	1-3	0	0.0-2.0	0-5
	16-70	5.0-10	7.4-8.4	3-5	0-1	2.0-4.0	5-13

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
46:							
Juanalo	0-1	5.0-15	7.9-8.4	15-35	0-1	0	0-2
	1-3	5.0-15	7.9-8.4	15-35	0-1	0.0-2.0	0-2
	3-9	5.0-15	7.9-8.4	15-35	0-1	0.0-2.0	0-2
	9-11	5.0-15	7.9-8.4	20-70	0-1	0.0-2.0	0-2
	11-21	---	---	---	---	---	---
47:							
Katzine	0-2	5.0-15	7.4-8.4	1-5	0	0	0
	2-7	5.0-15	7.4-8.4	1-15	0	0	0
	7-80	5.0-10	7.9-8.4	15-25	0	0	0
48:							
Lazear	0-5	5.0-15	7.4-9.0	1-15	0	0.0-2.0	0
	5-15	5.0-20	7.4-9.0	1-15	0	0.0-2.0	0
	15-19	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---
49:							
Lillings	0-2	10-25	7.4-9.0	0-15	0	0.0-4.0	1-10
	2-60	5.0-20	7.4-9.0	10-15	0-5	4.0-16.0	5-10
50:							
Littlehat	0-2	5.0-15	7.9-9.0	10-20	1-10	4.0-16.0	13-30
	2-36	5.0-15	7.9-9.0	10-20	1-5	8.0-35.0	30-100
	36-46	---	---	---	---	---	---
Persayo	0-2	5.0-10	7.9-8.4	3-5	0-2	2.0-4.0	0-5
	2-6	10-15	7.4-9.0	3-15	2-10	4.0-16.0	5-13
	6-18	15-20	7.4-9.0	3-15	2-10	4.0-16.0	5-13
	18-28	---	---	---	---	---	---
Badland	0-60	---	---	---	---	---	---
51:							
Littlehat	0-2	5.0-15	7.9-9.0	10-20	1-10	4.0-16.0	13-30
	2-31	5.0-15	7.9-9.0	10-20	1-5	8.0-35.0	30-100
	31-41	---	---	---	---	---	---
Persayo	0-2	5.0-10	7.9-8.4	3-5	0-2	2.0-4.0	0-5
	2-6	10-15	7.4-9.0	3-15	2-10	4.0-16.0	5-13
	6-17	15-20	7.4-9.0	3-15	2-10	4.0-16.0	5-13
	17-27	---	---	---	---	---	---
Nataani	0-3	5.0-10	7.4-8.4	5-10	0-1	2.0-4.0	0-5
	3-9	5.0-10	7.9-8.4	10-15	0-1	2.0-4.0	0-5
	9-21	5.0-10	7.4-8.4	5-15	15-45	2.0-16.0	0-13
	21-30	5.0-10	7.9-8.4	5-15	1-5	8.0-16.0	5-13
	30-40	---	---	---	---	---	---

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
52:							
Littlewater----------	0-1	50-90	5.1-6.0	0	0	0.0-2.0	0
	1-7	5.0-15	6.1-7.3	0	0	0	0
	7-20	5.0-15	6.1-7.3	0	0	0	0
	20-31	5.0-15	6.1-7.3	0	0	0	0
	31-80	5.0-15	6.1-7.3	0	0	0	0
Rubbleland----------	0-60	0.0-0.0	---	0	0	0	0
Rock outcrop---------	0-80	---	---	---	---	---	---
53:							
Longburn------------	0-1	5.0-15	6.6-7.8	0	0	0	0
	1-4	5.0-15	6.6-7.8	0	0	0	0
	4-17	10-25	7.4-7.8	0-5	0	0	0
	17-27	---	---	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---	---	---
54:							
Longburn------------	0-1	5.0-15	6.6-7.8	0	0	0	0
	1-4	5.0-15	6.6-7.8	0	0	0	0
	4-17	10-25	7.4-7.8	0-5	0	0	0
	17-27	---	---	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---	---	---
55:							
Mack-----------------	0-13	5.0-10	7.4-8.4	0-5	0	0.0-2.0	0
	13-33	5.0-25	7.4-8.4	1-15	0	0.0-2.0	0-2
	33-60	5.0-15	7.9-9.0	15-25	0	2.0-8.0	0-10
56:							
Mack-----------------	0-4	5.0-15	7.4-8.4	0-5	0	0.0-2.0	0-3
	4-14	5.0-15	7.4-8.4	0-5	0	0.0-2.0	0-3
	14-43	10-20	7.9-8.4	5-40	0-2	0.0-2.0	1-5
	43-56	10-20	7.9-9.0	1-15	0-2	0.0-2.0	1-5
	56-80	10-20	8.4-9.0	15-40	0-2	0.0-2.0	1-15
57:							
Mack-----------------	0-4	5.0-15	7.4-8.4	0-5	0	0.0-2.0	0-3
	4-14	5.0-15	7.4-8.4	0-5	0	0.0-2.0	0-3
	14-43	10-20	7.9-8.4	5-40	0-2	0.0-2.0	1-5
	43-56	10-20	7.9-9.0	1-15	0-2	0.0-2.0	1-5
	56-80	10-20	8.4-9.0	15-40	0-2	0.0-2.0	1-15
58:							
Mariano--------------	0-11	5.0-15	7.9-8.4	1-5	0	0.0-4.0	0-5
	11-29	2.0-10	7.9-8.4	15-75	0-2	0.0-16.0	0-5
	29-51	2.0-10	7.9-8.4	15-40	0-2	4.0-16.0	1-13
	51-80	2.0-10	7.9-8.4	15-35	1-10	8.0-16.0	5-25

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
59:							
Mariano	0-11	5.0-15	7.9-8.4	1-5	0	0.0-4.0	0-5
	11-29	2.0-10	7.9-8.4	15-75	0-2	0.0-16.0	0-5
	29-51	2.0-10	7.9-8.4	15-40	0-2	4.0-16.0	1-13
	51-80	2.0-10	7.9-8.4	15-35	1-10	8.0-16.0	5-25
60:							
Mariano, Stony	0-11	5.0-15	7.9-8.4	1-10	0	0.0-4.0	0-5
	11-29	2.0-10	7.9-8.4	15-75	0-2	0.0-16.0	0-5
	29-51	2.0-10	7.9-8.4	15-40	0-2	4.0-16.0	1-13
	51-80	2.0-10	7.9-8.4	15-35	1-10	8.0-16.0	5-25
61:							
Mikett	0-8	10-25	7.9-9.0	5-10	0-5	4.0-8.0	5-15
	8-60	5.0-25	8.5-9.6	5-10	0-5	8.0-16.0	15-20
62:							
Mikett	0-8	10-20	7.9-9.0	1-5	0	4.0-8.0	0-5
	8-60	5.0-20	8.5-9.0	5-10	0	4.0-8.0	5-15
63:							
Mikim	0-3	10-20	7.4-8.4	0-5	0	0.0-2.0	0
	3-15	10-20	7.4-8.4	0-5	0	0.0-2.0	0
	15-32	5.0-20	7.4-8.4	0-5	0	0.0-2.0	0
	32-60	10-20	7.4-8.4	0-5	0	0.0-2.0	0
64:							
Mikim	0-3	5.0-15	7.4-8.4	0-5	0	0.0-2.0	0
	3-15	10-20	7.4-8.4	0-5	0	0.0-2.0	0
	15-32	5.0-20	7.4-8.4	0-5	0	0.0-2.0	0
	32-60	10-20	7.4-8.4	0-5	0	0.0-2.0	0
65:							
Monierco	0-2	4.0-15	7.9-8.4	1-5	1-3	0.0-2.0	1-5
	2-8	3.0-15	7.9-8.4	1-5	1-5	0.0-2.0	1-5
	8-18	5.0-15	7.9-9.0	5-15	1-5	0.0-4.0	1-10
	18-28	---	---	---	---	---	---
66:							
Morefield	0-2	5.0-20	6.6-7.8	0-1	0	0	0
	2-24	10-20	6.6-7.8	0-1	0	0	0
	24-60	5.0-15	7.4-7.8	5-15	0	0	0
67:							
Morefield	0-2	5.0-20	6.6-7.8	0-1	0	0	0
	2-24	10-20	6.6-7.8	0-1	0	0	0
	24-60	5.0-15	7.4-7.8	5-15	0	0	0
68:							
Nataani	0-10	5.0-15	7.9-8.4	2-10	0-1	0.0-4.0	0-5
	10-23	5.0-15	7.9-8.4	5-15	1-5	2.0-4.0	0-5
	23-37	2.0-15	7.9-8.4	5-15	10-25	2.0-8.0	0-5
	37-39	1.0-10	7.9-8.4	5-15	10-25	2.0-8.0	0-5
	39-49	---	---	---	---	---	---

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
68:							
Yogovuci	0-2	5.0-15	7.9-8.4	5-15	0-3	0.0-4.0	0-5
	2-6	5.0-15	7.9-8.4	5-15	0-3	2.0-4.0	0-5
	6-13	5.0-15	7.9-8.4	5-15	0-3	2.0-4.0	0-5
	13-35	5.0-20	7.9-8.4	5-15	10-20	4.0-16.0	0-5
	35-75	4.0-30	7.9-9.0	1-15	5-15	4.0-16.0	0-5
	75-80	1.0-10	7.9-8.4	1-15	1-10	4.0-16.0	0-5
69:							
Oagamati	0-1	15-30	7.9-8.4	5-15	1-3	2.0-4.0	0-5
	1-5	25-40	7.9-8.4	5-15	1-3	2.0-16.0	0-5
	5-23	25-45	8.5-9.0	10-20	5-10	8.0-16.0	13-40
	23-35	25-40	8.5-9.0	10-20	2-5	8.0-16.0	13-40
	35-45	---	---	---	---	---	---
70:							
Pagayvay	0-1	5.0-10	7.4-8.4	0-3	0	0.0-4.0	0-5
	1-60	2.0-5.0	7.4-8.4	1-5	0	0.0-4.0	0-5
71:							
Persayo	0-2	10-15	7.9-8.4	3-5	0-2	2.0-4.0	0-5
	2-17	15-20	7.4-9.0	3-15	2-10	4.0-16.0	5-13
	17-27	---	---	---	---	---	---
Cairn	0-2	5.0-10	7.9-8.4	15-25	0	2.0-4.0	0-5
	2-9	10-20	7.9-8.4	15-25	0	2.0-4.0	0-5
	9-19	10-15	7.9-9.0	40-70	0-5	2.0-4.0	5-13
	19-46	5.0-10	7.4-7.8	15-50	20-50	2.0-8.0	0-5
	46-56	---	---	---	---	---	---
Patel	0-1	10-15	7.9-8.4	15-20	0-1	0.0-2.0	0-5
	1-8	20-25	8.5-9.0	5-20	0-1	2.0-4.0	13-30
	8-24	20-25	8.5-9.0	5-15	0-2	8.0-16.0	13-30
	24-37	15-20	7.4-8.4	5-10	5-15	8.0-16.0	13-30
	37-47	---	---	---	---	---	---
72:							
Persayo	0-2	10-25	7.9-8.4	5-30	5-10	2.0-4.0	0-5
	2-11	10-20	7.9-8.4	15-30	5-10	2.0-4.0	0-5
	11-21	---	---	---	---	---	---
73:							
Persayo	0-2	10-25	7.9-8.4	15-30	5-10	2.0-4.0	0-5
	2-11	10-20	7.9-8.4	15-30	5-10	2.0-4.0	0-5
	11-21	---	---	---	---	---	---
74:							
Persayo	0-2	10-25	7.9-8.4	15-30	5-10	2.0-4.0	0-5
	2-11	10-20	7.9-8.4	15-30	5-10	2.0-4.0	0-5
	11-21	---	---	---	---	---	---
Yogovuci	0-3	10-20	7.9-8.4	5-15	0	0.0-2.0	0-5
	3-12	10-30	7.9-8.4	5-15	0	0.0-2.0	0-5
	12-17	15-25	7.9-8.4	5-15	0-5	0.0-2.0	0-13
	17-22	15-25	7.4-7.8	5-15	5-45	2.0-4.0	0-13
	22-63	5.0-15	7.4-7.8	5-15	10-15	8.0-16.0	0-13
	63-80	15-30	7.9-8.4	5-15	10-15	8.0-16.0	0-13

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
75:							
Picliff	0-2	5.0-25	7.7-8.5	2-10	1-5	1.0-4.0	1-5
	2-6	3.0-20	7.8-8.6	5-15	1-5	1.0-4.0	1-5
	6-15	3.0-25	7.7-8.5	5-15	5-20	2.0-6.0	1-5
	15-25	---	---	---	---	---	---
76:							
Pogo	0-2	5.0-20	7.9-9.0	0-5	0-1	0.0-4.0	0-5
	2-60	5.0-30	7.9-9.0	1-15	0-1	0.0-4.0	0-5
77:							
Prater	0-1	10-25	6.6-7.3	0	0	0	0
	1-3	15-30	6.6-7.3	0	0	0	0
	3-9	15-30	6.6-8.4	0	0	0	0
	9-21	15-30	6.6-8.4	1-10	0	0	0
	21-60	15-30	6.6-8.4	1-10	0	0	0
Dolcan	0-2	5.0-15	7.4-7.8	0-2	0	0	0
	2-11	10-20	7.4-8.4	0-5	0	0	0
	11-21	---	---	---	---	---	---
78:							
Pulpit	0-5	5.0-15	6.6-7.8	0	0	0	0
	5-21	10-20	6.6-8.4	0-5	0	0	0
	21-35	5.0-20	7.4-8.4	5-10	0	0.0-2.0	0
	35-45	---	---	---	---	---	---
79:							
Ramper	0-3	5.0-20	7.4-8.4	1-5	0	0.0-4.0	0
	3-60	5.0-20	7.4-8.4	5-10	0	2.0-8.0	0
80:							
Ravola	0-9	10-20	8.5-9.4	2-15	0-5	8.0-16.0	15-50
	9-60	5.0-20	7.4-9.0	2-15	0-5	4.0-8.0	2-30
81:							
Ravola	0-2	10-25	7.9-8.4	1-5	0-2	0.0-2.0	0-3
	2-47	10-30	7.9-8.4	1-5	0-4	2.0-6.0	0-3
	47-80	10-30	7.9-8.4	1-5	0-4	2.0-6.0	0-3
82:							
Ravola	0-10	5.0-10	7.9-8.4	5-15	0	0.0-2.0	0-5
	10-80	10-15	7.9-8.4	10-15	0-2	0.0-4.0	0-5
83:							
Redlands	0-6	5.0-15	7.4-7.8	1-3	0	0.0-2.0	0-3
	6-22	10-25	7.9-8.4	5-10	0	0.0-2.0	0-3
	22-41	5.0-15	7.9-8.4	5-10	0	0.0-2.0	0-3
	41-80	5.0-25	7.9-8.4	5-10	0-5	0.0-2.0	0-3
84:							
Redlands	0-6	5.0-15	7.4-7.8	1-3	0	0.0-2.0	0-3
	6-22	10-25	7.9-8.4	5-10	0	0.0-2.0	0-3
	22-41	5.0-15	7.9-8.4	5-10	0	0.0-2.0	0-3
	41-80	5.0-25	7.9-8.4	5-10	0-5	0.0-2.0	0-3

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
85:							
Rizno	0-2	5.0-15	7.4-8.4	0	0	0	0
	2-9	5.0-10	7.9-8.4	5-15	0	0.0-2.0	0
	9-19	---	---	---	---	---	---
Gapmesa	0-2	5.0-15	6.6-7.3	0-3	0	0	0
	2-21	10-20	7.4-8.4	0-5	0	0	0
	21-28	5.0-20	7.4-8.4	5-10	0	0.0-2.0	0
	28-38	---	---	---	---	---	---
86:							
Rock outcrop	0-60	---	---	---	---	---	---
87:							
Rock outcrop	0-80	---	---	---	---	---	---
Farview	0-2	5.0-15	7.4-8.4	0-5	0	0.0-2.0	0-3
	2-5	5.0-10	7.4-8.4	1-15	0	0.0-2.0	0-3
	5-15	---	---	---	---	---	---
88:							
Romberg	0-2	10-20	6.6-7.8	0-5	0	0	0
	2-20	10-25	7.4-8.4	1-15	0	0.0-2.0	0
	20-60	10-25	7.4-8.4	1-15	0	0.0-2.0	0
Crosscan	0-2	10-25	7.4-8.4	0-5	0	0	0
	2-18	10-20	7.4-8.4	1-15	0	0.0-2.0	0
	18-28	---	---	---	---	---	---
89:							
Romberg	0-2	10-20	6.6-7.8	0-5	0	0	0
	2-20	10-25	7.4-8.4	1-15	0	0.0-2.0	0
	20-60	10-25	7.4-8.4	1-15	0	0.0-2.0	0
Crosscan	0-2	10-25	7.4-8.4	0-5	0	0	0
	2-18	10-20	7.4-8.4	1-15	0	0.0-2.0	0
	18-28	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---
90:							
Roubideau	0-6	5.0-20	6.6-7.8	0	0	0	0
	6-36	10-25	6.6-7.8	0	0	0	0
	36-38	10-25	6.6-7.8	0	0	0	0
	38-48	---	---	---	---	---	---
91:							
Sharps	0-2	5.0-15	7.4-8.4	0-1	0	0	0
	2-12	10-20	7.4-8.4	5-10	0	0	0
	12-27	10-20	7.9-8.4	10-15	0	0.0-2.0	0
	27-32	10-20	7.9-8.4	1-10	0	0.0-2.0	0
	32-42	---	---	---	---	---	---

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
92:							
Sharps, dry----------	0-2	5.0-15	7.4-8.4	0-1	0	0	0
	2-12	10-20	7.4-8.4	5-10	0	0	0
	12-27	10-20	7.9-8.4	10-15	0	0.0-2.0	0
	27-32	10-20	7.9-8.4	1-10	0	0.0-2.0	0
	32-42	---	---	---	---	---	---
Gapmesa----------	0-2	5.0-15	6.6-7.3	0-3	0	0	0
	2-21	10-20	7.4-8.4	0-5	0	0	0
	21-28	5.0-20	7.4-8.4	5-10	0	0.0-2.0	0
	28-38	---	---	---	---	---	---
93:							
Sheek----------	0-1	50-90	5.1-6.0	0	0	0.0-2.0	0
	1-5	10-20	6.6-7.3	0	0	0	0
	5-60	10-25	6.1-7.8	0	0	0	0
Archuleta----------	0-1	50-90	5.1-6.0	0	0	0.0-2.0	0
	1-6	5.0-20	6.1-7.8	0	0	0	0
	6-18	10-25	6.1-7.8	0	0	0	0
	18-28	---	---	---	---	---	---
94:							
Sheek----------	0-1	50-90	5.1-6.0	0	0	0.0-2.0	0
	1-5	10-20	6.6-7.3	0	0	0	0
	5-60	10-25	6.1-7.8	0	0	0	0
Archuleta----------	0-1	50-90	5.1-6.0	0	0	0.0-2.0	0
	1-6	5.0-20	6.1-7.8	0	0	0	0
	6-18	10-25	6.1-7.8	0	0	0	0
	18-28	---	---	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---	---	---
95:							
Sheek----------	0-1	50-90	5.1-6.0	0	0	0.0-2.0	0
	1-5	10-20	6.6-7.3	0	0	0	0
	5-60	10-25	6.1-7.8	0	0	0	0
Archuleta----------	0-1	50-90	5.1-6.0	0	0	0.0-2.0	0
	1-6	5.0-20	6.1-7.8	0	0	0	0
	6-18	10-25	6.1-7.8	0	0	0	0
	18-28	---	---	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---	---	---
96:							
Sheppard----------	0-7	1.0-10	7.4-8.4	0-10	0	0	0
	7-60	1.0-5.0	7.4-8.4	0-10	0	0.0-2.0	0
97:							
Sideshow----------	0-3	20-35	7.4-8.4	0-5	0	2.0-4.0	0
	3-60	20-40	7.4-8.4	0-5	0	0.0-2.0	0

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
98:							
Sideshow	0-3	20-35	7.4-8.4	0-5	0	2.0-4.0	0
	3-60	20-40	7.4-8.4	0-5	0	0.0-2.0	0
99:							
Simpatico	0-12	5.0-20	6.6-7.8	0	0	0	0
	12-45	15-25	6.6-7.8	0	0	0	0
	45-60	5.0-20	7.4-7.8	0-5	0	0	0
100:							
Snapill	0-3	5.0-10	7.4-7.8	3-5	0	0.0-2.0	0-5
	3-13	10-15	7.4-8.4	5-15	0	2.0-4.0	5-13
	13-38	10-15	7.9-9.0	10-40	0	2.0-4.0	5-30
	38-53	5.0-10	7.9-9.0	5-20	0	4.0-8.0	5-30
	53-63	---	---	---	---	---	---
101:							
Stephouse	0-1	3.0-10	7.9-8.4	10-30	0	0	0
	1-12	1.0-10	7.9-8.4	10-40	0	0	0
	12-22	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---
102:							
Strych	0-3	5.0-15	7.9-8.4	5-10	0	0.0-2.0	0-1
	3-15	5.0-15	7.9-8.4	10-15	0	0.0-2.0	0-5
	15-47	5.0-15	7.9-9.0	10-15	0	0.0-2.0	5-13
	47-64	5.0-10	7.9-9.0	5-10	0	0.0-2.0	5-13
Eagleye	0-2	15-20	7.4-8.4	1-5	0	2.0-4.0	0
	2-8	20-25	7.4-8.4	1-3	0-2	4.0-8.0	0-5
	8-18	20-25	7.4-8.4	0-1	2-5	4.0-16.0	5-13
	18-28	---	---	---	---	---	---
Rock outcrop	0-80	---	---	---	---	---	---
103:							
Tocito	0-2	5.0-10	7.4-7.8	5-10	0-1	2.0-4.0	0-5
	2-16	10-15	7.9-8.4	5-10	0-1	2.0-4.0	0-5
	16-80	10-15	7.9-8.4	10-15	1-5	4.0-8.0	0-5
Gullied land	0-3	---	---	5-10	1-5	2.0-4.0	0-5
	3-80	---	---	5-10	1-5	4.0-8.0	0-5
104:							
Tohona	0-1	10-15	7.4-7.8	3-5	0	0.0-2.0	0-5
	1-11	20-30	8.5-9.6	5-10	0	0.0-4.0	13-30
	11-33	15-20	7.4-8.4	2-5	15-30	8.0-16.0	5-13
	33-43	---	---	---	---	---	---
Kimnoli	0-4	5.0-10	7.4-7.8	1-5	0	0.0-1.0	0-1
	4-9	10-15	7.9-8.4	5-10	0	0.0-1.0	0-1
	9-19	---	---	---	---	---	---

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
104:							
Claysprings----------	0-2	10-15	7.4-7.8	3-5	0	0.0-2.0	5-13
	2-5	20-30	8.5-9.0	3-5	0	2.0-8.0	13-30
	5-16	20-30	7.9-9.0	1-3	2-5	4.0-16.0	13-30
	16-26	---	---	---	---	---	---
105:							
Torriorthents--------	0-4	5.0-15	6.6-9.0	1-10	0	0.0-8.0	0-5
	4-14	10-20	6.6-9.0	1-15	0-3	0.0-8.0	0-10
	14-24	---	6.6-9.0	---	---	---	---
106:							
Torriorthents--------	0-4	20-35	7.4-8.4	0-5	0	2.0-4.0	0
	4-14	20-40	7.4-8.4	0-5	0	0.0-2.0	0
	14-24	---	---	---	---	---	---
Badland--------------	0-60	---	---	---	---	0	---
107:							
Towaoc---------------	0-5	5.0-15	6.1-7.3	0	0	0	0
	5-12	5.0-15	6.1-7.3	0	0	0	0
	12-80	5.0-15	6.1-7.3	0	0	0	0
Kwiavu---------------	0-9	5.0-20	6.1-7.3	0	0	0	0
	9-15	10-20	6.1-7.3	0	0	0	0
	15-60	10-25	6.1-7.3	0	0	0	0
108:							
Towaoc---------------	0-5	5.0-15	6.1-7.3	0	0	0	0
	5-12	5.0-15	6.1-7.3	0	0	0	0
	12-80	5.0-15	6.1-7.3	0	0	0	0
109:							
Tragmon--------------	0-5	10-20	6.1-7.8	0	0	0	0
	5-11	10-25	6.6-7.8	0	0	0	0
	11-40	10-25	6.6-8.4	0	0	0	0
	40-60	10-25	6.6-8.4	0-1	0	0	0
Sheek----------------	0-4	10-25	6.1-7.8	0	0	0	0
	4-16	15-25	6.1-7.8	0	0	0	0
	16-42	15-25	6.1-7.8	0	0	0	0
	42-60	10-25	6.6-8.4	0-10	0	0	0
110:							
Tupuyci--------------	0-2	5.0-10	7.9-8.4	5-10	0	2.0-8.0	0-5
	2-80	5.0-15	7.9-8.4	5-15	0-1	2.0-8.0	0-10
Ives-----------------	0-1	5.0-15	8.5-9.0	0-10	0	0.0-4.0	0-3
	1-80	5.0-15	7.9-8.4	1-10	0-3	0.0-4.0	0-3
111:							
Typic Torriorthents--	0-3	5.0-15	7.4-9.4	1-10	0	0.0-8.0	0-5
	3-16	10-20	7.4-9.4	1-15	0-2	0.0-8.0	0-10
	16-26	---	---	---	---	---	---
Rock outcrop---------	0-60	---	---	---	---	---	---

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
112:							
Ustic Torrifluvents--	0-3	0.0-10	6.6-8.4	1-5	0	2.0-8.0	0
	3-11	0.0-10	6.6-8.4	1-5	0	2.0-8.0	0
	11-60	0.0-10	6.6-8.4	1-5	0	2.0-8.0	0
113:							
Ustic Torriorthents--	0-7	5.0-20	7.4-8.4	0-10	0	0.0-2.0	0
	7-60	10-25	7.4-8.4	1-5	0-5	0.0-2.0	0
Gullied land---	0-60	---	---	---	---	---	---
114:							
Uzacol---	0-5	20-30	7.4-8.4	1-5	0	2.0-4.0	0-10
	5-45	20-50	7.9-9.0	1-15	0-5	4.0-16.0	15-50
	45-59	20-45	7.9-9.0	1-15	0-15	4.0-16.0	15-50
	59-69	---	---	---	---	---	---
Zwicker---	0-1	25-45	7.4-9.0	1-5	0	2.0-4.0	0-5
	1-4	20-40	7.4-9.0	1-5	0	2.0-4.0	0-5
	4-32	20-45	7.4-9.0	5-10	1-10	2.0-4.0	0-5
	32-42	---	---	---	---	---	---
Claysprings---	0-3	10-35	7.9-9.2	1-15	0-5	0.0-4.0	0-10
	3-18	20-40	7.9-9.2	1-15	0-10	0.0-4.0	0-20
	18-28	---	---	---	---	---	---
115:							
Uzona---	0-2	10-25	7.9-8.4	0-5	0-5	0.0-4.0	0-5
	2-22	25-40	8.5-9.0	0-5	0-5	2.0-8.0	15-30
	22-80	25-60	8.5-9.0	0-5	0-5	10.0-50.0	30-60
116:							
Vessilla---	0-3	5.0-10	7.4-7.8	3-5	0	0.0-1.0	0-1
	3-8	5.0-10	7.4-8.4	5-20	0	0.0-1.0	0-1
	8-18	---	---	---	---	---	---
Rock outcrop---	0-80	---	---	---	---	---	---
117:							
Vosburg---	0-15	5.0-20	6.1-7.8	0	0	0	0
	15-60	10-25	6.6-8.4	0-10	0	0.0-2.0	0
118:							
Water---	0-60	---	---	---	---	---	---
119:							
Water---	---	---	---	---	---	---	---
Riverwash---	0-6	---	---	---	---	---	---
	6-60	---	---	---	---	---	---
120:							
Wauquie---	0-2	10-20	6.6-7.8	0-2	0	0	0
	2-20	5.0-20	7.4-8.4	1-5	0	0	0
	20-60	5.0-15	7.4-8.4	1-10	0	0	0

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
121:							
Wauquie	0-2	5.0-15	6.6-7.8	0-2	0	0	0
	2-6	5.0-20	6.6-7.8	0-5	0	0	0
	6-22	10-25	7.4-8.4	0-5	0	0	0
	22-60	10-25	7.4-8.4	1-10	0	0	0
Dolcan	0-2	5.0-15	7.4-7.8	0-2	0	0	0
	2-11	10-20	7.4-8.4	0-5	0	0	0
	11-21	---	---	---	---	---	---
122:							
Wauquie	0-2	5.0-15	6.6-7.8	0-2	0	0	0
	2-6	5.0-20	6.6-7.8	0-5	0	0	0
	6-22	10-25	7.4-8.4	0-5	0	0	0
	22-60	10-25	7.4-8.4	1-10	0	0	0
Dolcan	0-2	5.0-15	7.4-7.8	0-2	0	0	0
	2-11	10-20	7.4-8.4	0-5	0	0	0
	11-21	---	---	---	---	---	---
Rock outcrop	0-60	---	---	---	---	---	---
123:							
Wetherill	0-3	10-15	6.6-7.3	0-1	0	0.0-2.0	0-5
	3-18	10-15	6.6-7.8	0-1	0	0.0-2.0	0-5
	18-42	10-15	7.9-8.4	2-10	0	0.0-2.0	0-5
	42-70	10-15	7.9-9.0	5-30	0	0.0-2.0	0-5
Atlatl	0-2	10-15	7.9-8.4	10-15	0	0.0-1.0	0-1
	2-17	10-15	7.9-8.4	15-70	0	0.0-1.0	0-1
	17-30	5.0-10	7.9-8.4	40-90	0	0.0-1.0	0-1
	30-40	---	---	---	---	---	---
124:							
Wetherill	0-9	5.0-15	7.9-8.4	0-1	0	0.0-2.0	0
	9-21	5.0-15	7.9-8.4	0-1	0	0.0-2.0	0
	21-43	5.0-20	7.9-8.4	1-15	0	0.0-2.0	0-5
	43-80	5.0-15	7.9-8.4	15-40	0	0.0-2.0	0-5
Kucu	0-2	5.0-15	6.6-7.8	0-5	0-1	0.0-2.0	0
	2-15	10-20	6.6-7.8	0-5	0-1	0.0-2.0	0
	15-38	2.0-10	7.9-8.4	30-80	0-5	0.0-6.0	0-5
	38-80	2.0-10	7.9-8.4	1-15	0-5	0.0-2.0	0-5
125:							
Wetherill	0-3	5.0-20	6.6-7.8	0-1	0	0	0
	3-7	10-25	6.6-7.8	0-1	0	0	0
	7-48	5.0-20	7.4-8.4	1-10	0	0	0
	48-60	5.0-15	7.9-8.4	5-30	0	0.0-2.0	0-4
126:							
Wetherill	0-9	5.0-15	7.9-8.4	0-1	0	0.0-2.0	0
	9-21	10-30	7.9-8.4	0-1	0	0.0-2.0	0
	21-43	10-30	7.9-8.4	1-15	0	0.0-2.0	0
	43-80	10-25	7.9-8.4	15-30	0	0.0-2.0	0

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
127:							
Wetherill	0-9	5.0-15	7.9-8.4	0-1	0	0.0-2.0	0
	9-21	10-30	7.9-8.4	0-1	0	0.0-2.0	0
	21-43	10-30	7.9-8.4	1-15	0	0.0-2.0	0
	43-80	10-25	7.9-8.4	15-30	0	0.0-2.0	0
128:							
Wetherill	0-9	5.0-15	7.9-8.4	0-1	0	0.0-2.0	0
	9-21	10-30	7.9-8.4	0-1	0	0.0-2.0	0
	21-43	10-30	7.9-8.4	1-15	0	0.0-2.0	0
	43-80	10-25	7.9-8.4	15-30	0	0.0-2.0	0
129:							
Wetherill	0-9	5.0-15	7.9-8.4	0-1	0	0.0-2.0	0
	9-21	5.0-15	7.9-8.4	0-1	0	0.0-2.0	0
	21-43	5.0-20	7.9-8.4	1-15	0	0.0-2.0	0-5
	43-80	5.0-15	7.9-8.4	15-40	0	0.0-2.0	0-5
Wetoe	0-7	3.0-10	6.1-7.3	0	0	0	0
	7-40	4.0-15	6.1-7.3	0	0	0	0
	40-60	1.0-15	7.4-8.4	1-10	0	0	0
130:							
Wetoe	0-8	5.0-15	6.1-7.3	0	0	0	0
	8-60	10-20	6.1-7.3	0	0	0	0
Nees	0-3	5.0-15	6.1-7.3	0	0	0	0
	3-11	10-20	6.1-7.3	0	0	0	0
	11-15	---	---	---	---	---	---
Rock outcrop	0-80	---	---	---	---	---	---
131:							
Yarts	0-9	5.0-15	7.4-8.4	1-5	0	0	0
	9-13	3.0-15	7.4-8.4	1-5	0	0	0
	13-60	5.0-10	7.4-9.0	1-5	0	0	0
132:							
Yogovuci	0-2	5.0-15	7.9-8.4	5-15	0-3	0.0-4.0	0-5
	2-6	5.0-15	7.9-8.4	5-15	0-3	2.0-4.0	0-5
	6-13	5.0-15	7.9-8.4	5-15	0-3	2.0-4.0	0-5
	13-35	5.0-20	7.9-8.4	5-15	10-20	4.0-16.0	0-5
	35-75	4.0-30	7.9-9.0	1-15	5-15	4.0-16.0	0-5
	75-80	1.0-10	7.9-8.4	1-15	1-10	4.0-16.0	0-5
Taqoci	0-9	5.0-15	7.9-8.4	2-15	0-1	0.0-2.0	1-13
	9-26	10-20	8.5-9.5	10-20	0-5	2.0-8.0	13-30
	26-37	10-25	8.5-9.0	10-20	0-5	2.0-8.0	13-30
	37-80	2.0-10	7.9-8.4	10-15	1-15	8.0-16.0	5-20
133:							
Zigzag	0-1	15-30	7.4-8.4	1-5	0	0.0-2.0	0
	1-5	15-30	7.4-8.4	1-5	0	0.0-2.0	0
	5-19	20-45	7.4-8.4	1-10	0	0.0-2.0	0
	19-29	---	---	---	---	---	---

Table 14.--Chemical Soil Properties--Continued

Map symbol and soil name	Depth	Cation exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio
	Inches	meq/100 g	pH	Pct	Pct	mmhos/cm	
133:							
Sideshow	0-3	20-35	7.4-8.4	0-5	0	2.0-4.0	0
	3-60	20-40	7.4-8.4	0-5	0	0.0-2.0	0
134:							
Zyme	0-2	20-40	7.4-8.4	1-5	0	0	0
	2-12	20-30	7.4-8.4	1-10	0	0.0-2.0	0
	12-22	---	---	---	---	---	---
135:							
Zyme	0-4	15-30	7.4-8.4	1-5	0	0.0-2.0	0-10
	4-18	20-30	7.4-8.4	1-10	0	0.0-2.0	0
	18-28	---	---	---	---	---	---
Katzine, dry	0-2	5.0-15	7.4-8.4	1-5	0	0	0
	2-12	5.0-15	7.4-8.4	1-15	0	0	0
	12-80	5.0-10	7.9-8.4	15-25	0	0	0
136:							
Zyme	0-2	10-30	7.4-8.4	1-5	0	0	0
	2-12	20-30	7.4-8.4	1-10	0	0.0-2.0	0
	12-22	---	---	---	---	---	---

Table 15.--Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
1:										
Arabrab	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Longburn	D	Very high	Jan-Dec	---	---	---	---	None	---	None
2:										
Awitava	D	Very high	Jan-Dec	---	---	---	---	None	---	None
3:										
Badland	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
4:										
Barx	B	Low	Jan-Dec	---	---	---	---	None	---	None
Gapmesa	C	Medium	Jan-Dec	---	---	---	---	None	---	None
5:										
Barx	B	Medium	Jan-Dec	---	---	---	---	None	---	None
6:										
Barx	B	Low	Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
7:										
Battlerock----------	B	Medium								
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
8:										
Battlerock, saline-sodic--	C	Very low								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
9:										
Battlerock, slightly saline-sodic----------	C	Medium								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
10:										
Bebeevar----------	B	Very low								
			May	3.5-5.0	>6.0	---	---	None	---	None
			June	3.5-5.0	>6.0	---	---	None	Very brief	Occasional
			July	3.5-5.0	>6.0	---	---	None	Very brief	Occasional
			August	3.5-5.0	>6.0	---	---	None	Very brief	Occasional
			September	3.5-5.0	>6.0	---	---	None	Very brief	Occasional
			October	3.5-5.0	>6.0	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
10:										
Walrees	C	Low								
			January	2.0-3.5	>6.0	---	---	None	---	None
			February	2.0-3.5	>6.0	---	---	None	---	None
			March	2.0-3.5	>6.0	---	---	None	---	None
			April	2.0-3.5	>6.0	---	---	None	---	None
			May	2.0-3.5	>6.0	---	---	None	---	None
			June	2.0-3.5	>6.0	---	---	None	Brief	Frequent
			July	2.0-3.5	>6.0	---	---	None	Brief	Frequent
			August	2.0-3.5	>6.0	---	---	None	Brief	Frequent
			September	2.0-3.5	>6.0	---	---	None	Brief	Frequent
			October	2.0-3.5	>6.0	---	---	None	---	None
			November	2.0-3.5	>6.0	---	---	None	---	None
			December	2.0-3.5	>6.0	---	---	None	---	None
11:										
Benally	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
12:										
Blackston	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Camac	C	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
13:										
Bluechief	C	High								
			Jan-Dec	---	---	---	---	None	---	None
14:										
Bluechief	C	High								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
15:										
Bluechief	C	High	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
16:										
Cahona	B	High	Jan-Dec	---	---	---	---	None	---	None
Pulpit	C	High	Jan-Dec	---	---	---	---	None	---	None
17:										
Cahona	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Zigzag	D	High	Jan-Dec	---	---	---	---	None	---	None
18:										
Camac	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Kimbeto	B	Low	Jan-Dec	---	---	---	---	None	---	None
Badland	D	High	Jan-Dec	---	---	---	---	None	---	None
19:										
Chimrock, sodic	C	Medium	Jan-Dec	---	---	---	---	None	---	None
20:										
Chimrock	C	Low	Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
21:										
Claysprings	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
22:										
Claysprings	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
23:										
Cowboy	D	High								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
24:										
Cowboy	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Kava	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
25:										
Cowboy	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Kava	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
26:										
Decorock	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Salamander	B	Low								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
27:										
Decorock	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Salamander	C	Low	Jan-Dec	---	---	---	---	None	---	None
Badland	D	Very high	Jan-Dec	---	---	---	---	None	---	None
28:										
Dolcan	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Kucu	C	High	Jan-Dec	---	---	---	---	None	---	None
29:										
Elias	C	High	Jan-Dec	---	---	---	---	None	---	None
Yarts	B	Low	Jan-Dec	---	---	---	---	None	---	None
30:										
Farb	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
31:										
Farb	D	High	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
31:										
Fruitland	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
32:										
Fardraw	C	Very high								
			Jan-Dec	---	---	---	---	None	---	None
33:										
Farview	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Beclabito	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
34:										
Farview	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
35:										
Fluvents	A	Negligible								
			March	---	---	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Brief	Occasional
			July	---	---	---	---	None	Brief	Occasional
			August	---	---	---	---	None	Brief	Occasional

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
35:										
Fluvaquents	D	Very low								
			January	1.0-3.0	---	---	---	None	---	None
			February	1.0-3.0	---	---	---	None	---	None
			March	1.0-3.0	---	---	---	None	Brief	Frequent
			April	1.0-3.0	---	---	---	None	Brief	Frequent
			May	1.0-3.0	---	---	---	None	Brief	Frequent
			June	1.0-3.0	---	---	---	None	Brief	Frequent
			July	1.0-3.0	---	---	---	None	---	None
			August	1.0-3.0	---	---	---	None	---	None
			September	1.0-3.0	---	---	---	None	---	None
			October	1.0-3.0	---	---	---	None	---	None
			November	1.0-3.0	---	---	---	None	---	None
			December	1.0-3.0	---	---	---	None	---	None
36:										
Gladel	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Pulpit	C	High								
			Jan-Dec	---	---	---	---	None	---	None
37:										
Greycap	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Nomad	D	High								
			Jan-Dec	---	---	---	---	None	---	None
38:										
Gypsey	C	High								
			Jan-Dec	---	---	---	---	None	---	None
39:										
Gypsey	C	High								
			Jan-Dec	---	---	---	---	None	---	None
40:										
Herm	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
41:										
Hope	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
42:										
Hoskay	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Patel	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
43:										
Ives	B	Very low								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
44:										
Jeddito	B	Low								
			March	---	---	---	---	None	Very brief	Rare
			April	---	---	---	---	None	Very brief	Rare
			May	---	---	---	---	None	Very brief	Rare
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
44:										
Escavada	B	Low								
			January	5.0-6.0	>6.0	---	---	None	---	None
			February	5.0-6.0	>6.0	---	---	None	---	None
			March	5.0-6.0	>6.0	---	---	None	---	None
			April	5.0-6.0	>6.0	---	---	None	---	None
			May	5.0-6.0	>6.0	---	---	None	---	None
			June	5.0-6.0	>6.0	---	---	None	---	None
			July	---	---	---	---	None	Very brief	Occasional
			August	---	---	---	---	None	Very brief	Occasional
			September	---	---	---	---	None	Very brief	Occasional
			November	5.0-6.0	>6.0	---	---	None	---	None
			December	5.0-6.0	>6.0	---	---	None	---	None
45:										
Jeddito	B	Low								
			March	---	---	---	---	None	Very brief	Rare
			April	---	---	---	---	None	Very brief	Rare
			May	---	---	---	---	None	Very brief	Rare
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
46:										
Juanalo	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
47:										
Katzine	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
48:										
Lazear	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
49:										
Lillings	B	High								
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Brief	Rare
50:										
Littlehat	B	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Persayo	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
51:										
Littlehat	B	High								
			Jan-Dec	---	---	---	---	None	---	None
Persayo	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Nataani	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
52:										
Littlewater	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Rubbleland	A	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
53:										
Longburn	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
54:										
Longburn	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
55:										
Mack	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
56:										
Mack	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
57:										
Mack	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
58:										
Mariano	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None
59:										
Mariano	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None
60:										
Mariano, Stony	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
61:										
Mikett	D	Medium								
			January	1.0-3.0	---	---	---	None	---	None
			February	1.0-3.0	---	---	---	None	---	None
			March	1.0-3.0	---	---	---	None	---	None
			April	1.0-3.0	---	---	---	None	---	None
			May	1.0-3.0	---	---	---	None	---	None
			June	1.0-3.0	---	---	---	None	---	None
			July	1.0-3.0	---	---	---	None	---	None
			August	1.0-3.0	---	---	---	None	---	None
			September	1.0-3.0	---	---	---	None	---	None
			October	1.0-3.0	---	---	---	None	---	None
			November	1.0-3.0	---	---	---	None	---	None
			December	1.0-3.0	---	---	---	None	---	None
62:										
Mikett	C	Medium								
			January	4.0-6.0	---	---	---	None	---	None
			February	4.0-6.0	---	---	---	None	---	None
			March	4.0-6.0	---	---	---	None	---	None
			April	3.0-5.0	---	---	---	None	---	None
			May	3.0-5.0	---	---	---	None	---	None
			June	3.0-5.0	---	---	---	None	---	None
			July	3.0-5.0	---	---	---	None	---	None
			August	3.0-5.0	---	---	---	None	---	None
			September	4.0-6.0	---	---	---	None	---	None
			October	4.0-6.0	---	---	---	None	---	None
			November	4.0-6.0	---	---	---	None	---	None
			December	4.0-6.0	---	---	---	None	---	None
63:										
Mikim	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
64:										
Mikim	B	High								
			Jan-Dec	---	---	---	---	None	---	None
65:										
Monierco	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
66:										
Morefield	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
67:										
Morefield	B	High								
			Jan-Dec	---	---	---	---	None	---	None
68:										
Nataani	B	High								
			Jan-Dec	---	---	---	---	None	---	None
Yogovuci	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
69:										
Oagamati	D	High								
			Jan-Dec	---	---	---	---	None	---	None
70:										
Pagayvay	A	Low								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
71:										
Persayo	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Cairn	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Patel	C	High								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
72:										
Persayo	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
73:										
Persayo	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
74:										
Persayo	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Yogovuci	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
75:										
Picliff	D	High								
			Jan-Dec	---	---	---	---	None	---	None
76:										
Pogo	D	Medium								
			January	0.0-1.5	---	---	---	None	Very long	Frequent
			February	0.0-1.5	---	---	---	None	Very long	Frequent
			March	0.0-1.5	---	---	---	None	Very long	Frequent
			April	0.0-1.5	---	---	---	None	Very long	Frequent
			May	0.0-1.5	---	---	---	None	Very long	Frequent
			June	0.0-1.5	---	---	---	None	Very long	Frequent
			July	0.0-1.5	---	---	---	None	Very long	Frequent
			August	0.0-1.5	---	---	---	None	Very long	Frequent
			September	0.0-1.5	---	---	---	None	Very long	Frequent
			October	0.0-1.5	---	---	---	None	Very long	Frequent
			November	0.0-1.5	---	---	---	None	Very long	Frequent
			December	0.0-1.5	---	---	---	None	Very long	Frequent
77:										
Prater	B	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Dolcan	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
78:										
Pulpit	C	High								
			Jan-Dec	---	---	---	---	None	---	None
79:										
Ramper	B	Medium								
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
80:										
Ravola	B	Medium								
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
81:										
Ravola	C	Medium								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
82:										
Ravola	B	Low								
			July	---	---	---	---	None	Very brief	Occasional
			August	---	---	---	---	None	Very brief	Occasional
			September	---	---	---	---	None	Very brief	Occasional
83:										
Redlands	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
84:										
Redlands	B	Very low	Jan-Dec	---	---	---	---	None	---	None
85:										
Rizno	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Gapmesa	C	High	Jan-Dec	---	---	---	---	None	---	None
86:										
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
87:										
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Farview	D	High	Jan-Dec	---	---	---	---	None	---	None
88:										
Romberg	B	High	Jan-Dec	---	---	---	---	None	---	None
Crosscan	D	Very high	Jan-Dec	---	---	---	---	None	---	None
89:										
Romberg	B	Very high	Jan-Dec	---	---	---	---	None	---	None
Crosscan	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
90:										
Roubideau	C	Medium	Jan-Dec	---	---	---	---	None	---	None
91:										
Sharps	C	High	Jan-Dec	---	---	---	---	None	---	None
92:										
Sharps, dry	C	High	Jan-Dec	---	---	---	---	None	---	None
Gapmesa	C	High	Jan-Dec	---	---	---	---	None	---	None
93:										
Sheek	B	High	Jan-Dec	---	---	---	---	None	---	None
Archuleta	D	Very high	Jan-Dec	---	---	---	---	None	---	None
94:										
Sheek	B	Very high	Jan-Dec	---	---	---	---	None	---	None
Archuleta	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
95:										
Sheek	B	Very high	Jan-Dec	---	---	---	---	None	---	None
Archuleta	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
96:										
Sheppard	A	Negligible								
			Jan-Dec	---	---	---	---	None	---	None
97:										
Sideshow	C	High								
			Jan-Dec	---	---	---	---	None	---	None
98:										
Sideshow	C	Very high								
			Jan-Dec	---	---	---	---	None	---	None
99:										
Simpatico	B	Medium								
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
100:										
Snapill	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
101:										
Stephouse	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
102:										
Strych	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Eagleye	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
103:										
Tocito	B	Low								
			March	---	---	---	---	None	Very brief	Rare
			April	---	---	---	---	None	Very brief	Rare
			May	---	---	---	---	None	Very brief	Rare
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
Gullied land	D	High								
			Jan-Dec	---	---	---	---	None	---	None
104:										
Tohona	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Kimnoli	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Claysprings	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
105:										
Torriorthents	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
106:										
Torriorthents	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
107:										
Towaoc	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Kwiavu	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
108:										
Towaoc	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
109:										
Tragmon	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Sheek	B	High								
			Jan-Dec	---	---	---	---	None	---	None
110:										
Tupuyci	B	Very low								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
Ives	B	Very low								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
111:										
Typic Torriorthents	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
112:										
Ustic Torrifluvents-------	A	Very low								
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
113:										
Ustic Torriorthents-------	D	Medium								
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
Gullied land--------------	D	Very high								
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
114:										
Uzacol---------------------	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Zwicker--------------------	C	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Claysprings----------------	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
115:										
Uzona----------------------	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
116:										
Vessilla	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
117:										
Vosburg	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
118:										
Water	---	---								
			Jan-Dec	---	---	---	---	None	---	None
119:										
Water	---	---								
			Jan-Dec	---	---	---	---	None	---	None
Riverwash	D	Very high								
			January	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			February	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			March	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			April	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			May	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			June	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			July	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			August	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			September	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			October	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			November	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			December	0.0-2.0	>6.0	---	---	None	Very long	Frequent
120:										
Wauquie	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
121:										
Wauquie	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Dolcan	D	Very high	Jan-Dec	---	---	---	---	None	---	None
122:										
Wauquie	B	High	Jan-Dec	---	---	---	---	None	---	None
Dolcan	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
123:										
Wetherill	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Atlatl	C	High	Jan-Dec	---	---	---	---	None	---	None
124:										
Wetherill	B	Low	Jan-Dec	---	---	---	---	None	---	None
Kucu	C	High	Jan-Dec	---	---	---	---	None	---	None
125:										
Wetherill	B	High	Jan-Dec	---	---	---	---	None	---	None
126:										
Wetherill	B	Low	Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
127:										
Wetherill	B	Medium	Jan-Dec	---	---	---	---	None	---	None
128:										
Wetherill	B	Low	Jan-Dec	---	---	---	---	None	---	None
129:										
Wetherill	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Wetoe	B	Medium	Jan-Dec	---	---	---	---	None	---	None
130:										
Wetoe	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Nees	D	High	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
131:										
Yarts	B	Very low	Jan-Dec	---	---	---	---	None	---	None
132:										
Yogovuci	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Taqoci	C	Low	Jan-Dec	---	---	---	---	None	---	None

Table 15.--Water Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
133:										
Zigzag	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Sideshow	C	Very high								
			Jan-Dec	---	---	---	---	None	---	None
134:										
Zyme	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
135:										
Zyme	B	High								
			Jan-Dec	---	---	---	---	None	---	None
Katzine, dry	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
136:										
Zyme	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
1:										
Arabrab	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Longburn	D	Very high	Jan-Dec	---	---	---	---	None	---	None
2:										
Awitava	D	Very high	Jan-Dec	---	---	---	---	None	---	None
3:										
Badland	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
4:										
Barx	B	Low	Jan-Dec	---	---	---	---	None	---	None
Gapmesa	C	Medium	Jan-Dec	---	---	---	---	None	---	None
5:										
Barx	B	Medium	Jan-Dec	---	---	---	---	None	---	None
6:										
Barx	B	Low	Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
7:										
Battlerock----------	B	Medium								
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
8:										
Battlerock, saline-sodic--	C	Very low								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
9:										
Battlerock, slightly saline-sodic----------	C	Medium								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
10:										
Bebeevar----------	B	Very low								
			May	3.5-5.0	>6.0	---	---	None	---	None
			June	3.5-5.0	>6.0	---	---	None	Very brief	Occasional
			July	3.5-5.0	>6.0	---	---	None	Very brief	Occasional
			August	3.5-5.0	>6.0	---	---	None	Very brief	Occasional
			September	3.5-5.0	>6.0	---	---	None	Very brief	Occasional
			October	3.5-5.0	>6.0	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
10:										
Walrees	C	Low								
			January	2.0-3.5	>6.0	---	---	None	---	None
			February	2.0-3.5	>6.0	---	---	None	---	None
			March	2.0-3.5	>6.0	---	---	None	---	None
			April	2.0-3.5	>6.0	---	---	None	---	None
			May	2.0-3.5	>6.0	---	---	None	---	None
			June	2.0-3.5	>6.0	---	---	None	Brief	Frequent
			July	2.0-3.5	>6.0	---	---	None	Brief	Frequent
			August	2.0-3.5	>6.0	---	---	None	Brief	Frequent
			September	2.0-3.5	>6.0	---	---	None	Brief	Frequent
			October	2.0-3.5	>6.0	---	---	None	---	None
			November	2.0-3.5	>6.0	---	---	None	---	None
			December	2.0-3.5	>6.0	---	---	None	---	None
11:										
Benally	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
12:										
Blackston	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Camac	C	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
13:										
Bluechief	C	High								
			Jan-Dec	---	---	---	---	None	---	None
14:										
Bluechief	C	High								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
15:										
Bluechief	C	High	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
16:										
Cahona	B	High	Jan-Dec	---	---	---	---	None	---	None
Pulpit	C	High	Jan-Dec	---	---	---	---	None	---	None
17:										
Cahona	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Zigzag	D	High	Jan-Dec	---	---	---	---	None	---	None
18:										
Camac	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Kimbeto	B	Low	Jan-Dec	---	---	---	---	None	---	None
Badland	D	High	Jan-Dec	---	---	---	---	None	---	None
19:										
Chimrock, sodic	C	Medium	Jan-Dec	---	---	---	---	None	---	None
20:										
Chimrock	C	Low	Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
21:										
Claysprings	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
22:										
Claysprings	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
23:										
Cowboy	D	High								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
24:										
Cowboy	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Kava	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
25:										
Cowboy	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Kava	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
26:										
Decorock	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Salamander	B	Low								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
27:										
Decorock	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Salamander	C	Low	Jan-Dec	---	---	---	---	None	---	None
Badland	D	Very high	Jan-Dec	---	---	---	---	None	---	None
28:										
Dolcan	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Kucu	C	High	Jan-Dec	---	---	---	---	None	---	None
29:										
Elias	C	High	Jan-Dec	---	---	---	---	None	---	None
Yarts	B	Low	Jan-Dec	---	---	---	---	None	---	None
30:										
Farb	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
31:										
Farb	D	High	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
31:										
Fruitland	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
32:										
Fardraw	C	Very high								
			Jan-Dec	---	---	---	---	None	---	None
33:										
Farview	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Beclabito	C	Low								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
34:										
Farview	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
35:										
Fluvents	A	Negligible								
			March	---	---	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Brief	Occasional
			July	---	---	---	---	None	Brief	Occasional
			August	---	---	---	---	None	Brief	Occasional

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
35:										
Fluvaquents	D	Very low								
			January	1.0-3.0	---	---	---	None	---	None
			February	1.0-3.0	---	---	---	None	---	None
			March	1.0-3.0	---	---	---	None	Brief	Frequent
			April	1.0-3.0	---	---	---	None	Brief	Frequent
			May	1.0-3.0	---	---	---	None	Brief	Frequent
			June	1.0-3.0	---	---	---	None	Brief	Frequent
			July	1.0-3.0	---	---	---	None	---	None
			August	1.0-3.0	---	---	---	None	---	None
			September	1.0-3.0	---	---	---	None	---	None
			October	1.0-3.0	---	---	---	None	---	None
			November	1.0-3.0	---	---	---	None	---	None
			December	1.0-3.0	---	---	---	None	---	None
36:										
Gladel	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Pulpit	C	High								
			Jan-Dec	---	---	---	---	None	---	None
37:										
Greycap	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Nomad	D	High								
			Jan-Dec	---	---	---	---	None	---	None
38:										
Gypsey	C	High								
			Jan-Dec	---	---	---	---	None	---	None
39:										
Gypsey	C	High								
			Jan-Dec	---	---	---	---	None	---	None
40:										
Herm	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
41:										
Hope	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
42:										
Hoskay	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Patel	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
43:										
Ives	B	Very low								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
44:										
Jeddito	B	Low								
			March	---	---	---	---	None	Very brief	Rare
			April	---	---	---	---	None	Very brief	Rare
			May	---	---	---	---	None	Very brief	Rare
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
44:										
Escavada	B	Low								
			January	5.0-6.0	>6.0	---	---	None	---	None
			February	5.0-6.0	>6.0	---	---	None	---	None
			March	5.0-6.0	>6.0	---	---	None	---	None
			April	5.0-6.0	>6.0	---	---	None	---	None
			May	5.0-6.0	>6.0	---	---	None	---	None
			June	5.0-6.0	>6.0	---	---	None	---	None
			July	---	---	---	---	None	Very brief	Occasional
			August	---	---	---	---	None	Very brief	Occasional
			September	---	---	---	---	None	Very brief	Occasional
			November	5.0-6.0	>6.0	---	---	None	---	None
			December	5.0-6.0	>6.0	---	---	None	---	None
45:										
Jeddito	B	Low								
			March	---	---	---	---	None	Very brief	Rare
			April	---	---	---	---	None	Very brief	Rare
			May	---	---	---	---	None	Very brief	Rare
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
46:										
Juanalo	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
47:										
Katzine	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
48:										
Lazear	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
49:										
Lillings	B	High								
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Brief	Rare
50:										
Littlehat	B	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Persayo	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
51:										
Littlehat	B	High								
			Jan-Dec	---	---	---	---	None	---	None
Persayo	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Nataani	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
52:										
Littlewater	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Rubbleland	A	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
53:										
Longburn	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
54:										
Longburn	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
55:										
Mack	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
56:										
Mack	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
57:										
Mack	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
58:										
Mariano	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None
59:										
Mariano	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None
60:										
Mariano, Stony	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
61:										
Mikett	D	Medium								
			January	1.0-3.0	---	---	---	None	---	None
			February	1.0-3.0	---	---	---	None	---	None
			March	1.0-3.0	---	---	---	None	---	None
			April	1.0-3.0	---	---	---	None	---	None
			May	1.0-3.0	---	---	---	None	---	None
			June	1.0-3.0	---	---	---	None	---	None
			July	1.0-3.0	---	---	---	None	---	None
			August	1.0-3.0	---	---	---	None	---	None
			September	1.0-3.0	---	---	---	None	---	None
			October	1.0-3.0	---	---	---	None	---	None
			November	1.0-3.0	---	---	---	None	---	None
			December	1.0-3.0	---	---	---	None	---	None
62:										
Mikett	C	Medium								
			January	4.0-6.0	---	---	---	None	---	None
			February	4.0-6.0	---	---	---	None	---	None
			March	4.0-6.0	---	---	---	None	---	None
			April	3.0-5.0	---	---	---	None	---	None
			May	3.0-5.0	---	---	---	None	---	None
			June	3.0-5.0	---	---	---	None	---	None
			July	3.0-5.0	---	---	---	None	---	None
			August	3.0-5.0	---	---	---	None	---	None
			September	4.0-6.0	---	---	---	None	---	None
			October	4.0-6.0	---	---	---	None	---	None
			November	4.0-6.0	---	---	---	None	---	None
			December	4.0-6.0	---	---	---	None	---	None
63:										
Mikim	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
64:										
Mikim	B	High								
			Jan-Dec	---	---	---	---	None	---	None
65:										
Monierco	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
66:										
Morefield	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
67:										
Morefield	B	High								
			Jan-Dec	---	---	---	---	None	---	None
68:										
Nataani	B	High								
			Jan-Dec	---	---	---	---	None	---	None
Yogovuci	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
69:										
Oagamati	D	High								
			Jan-Dec	---	---	---	---	None	---	None
70:										
Pagayvay	A	Low								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
71:										
Persayo	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Cairn	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Patel	C	High								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
72:										
Persayo	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
73:										
Persayo	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
74:										
Persayo	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Yogovuci	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None
75:										
Picliff	D	High								
			Jan-Dec	---	---	---	---	None	---	None
76:										
Pogo	D	Medium								
			January	0.0-1.5	---	---	---	None	Very long	Frequent
			February	0.0-1.5	---	---	---	None	Very long	Frequent
			March	0.0-1.5	---	---	---	None	Very long	Frequent
			April	0.0-1.5	---	---	---	None	Very long	Frequent
			May	0.0-1.5	---	---	---	None	Very long	Frequent
			June	0.0-1.5	---	---	---	None	Very long	Frequent
			July	0.0-1.5	---	---	---	None	Very long	Frequent
			August	0.0-1.5	---	---	---	None	Very long	Frequent
			September	0.0-1.5	---	---	---	None	Very long	Frequent
			October	0.0-1.5	---	---	---	None	Very long	Frequent
			November	0.0-1.5	---	---	---	None	Very long	Frequent
			December	0.0-1.5	---	---	---	None	Very long	Frequent
77:										
Prater	B	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Dolcan	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
78:										
Pulpit	C	High								
			Jan-Dec	---	---	---	---	None	---	None
79:										
Ramper	B	Medium								
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
80:										
Ravola	B	Medium								
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
81:										
Ravola	C	Medium								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
82:										
Ravola	B	Low								
			July	---	---	---	---	None	Very brief	Occasional
			August	---	---	---	---	None	Very brief	Occasional
			September	---	---	---	---	None	Very brief	Occasional
83:										
Redlands	B	Very low								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
84:										
Redlands	B	Very low	Jan-Dec	---	---	---	---	None	---	None
85:										
Rizno	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Gapmesa	C	High	Jan-Dec	---	---	---	---	None	---	None
86:										
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
87:										
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Farview	D	High	Jan-Dec	---	---	---	---	None	---	None
88:										
Romberg	B	High	Jan-Dec	---	---	---	---	None	---	None
Crosscan	D	Very high	Jan-Dec	---	---	---	---	None	---	None
89:										
Romberg	B	Very high	Jan-Dec	---	---	---	---	None	---	None
Crosscan	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
90:										
Roubideau	C	Medium	Jan-Dec	---	---	---	---	None	---	None
91:										
Sharps	C	High	Jan-Dec	---	---	---	---	None	---	None
92:										
Sharps, dry	C	High	Jan-Dec	---	---	---	---	None	---	None
Gapmesa	C	High	Jan-Dec	---	---	---	---	None	---	None
93:										
Sheek	B	High	Jan-Dec	---	---	---	---	None	---	None
Archuleta	D	Very high	Jan-Dec	---	---	---	---	None	---	None
94:										
Sheek	B	Very high	Jan-Dec	---	---	---	---	None	---	None
Archuleta	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
95:										
Sheek	B	Very high	Jan-Dec	---	---	---	---	None	---	None
Archuleta	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
96:										
Sheppard	A	Negligible								
			Jan-Dec	---	---	---	---	None	---	None
97:										
Sideshow	C	High								
			Jan-Dec	---	---	---	---	None	---	None
98:										
Sideshow	C	Very high								
			Jan-Dec	---	---	---	---	None	---	None
99:										
Simpatico	B	Medium								
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
100:										
Snapill	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
101:										
Stephouse	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
102:										
Strych	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Eagleye	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
103:										
Tocito	B	Low								
			March	---	---	---	---	None	Very brief	Rare
			April	---	---	---	---	None	Very brief	Rare
			May	---	---	---	---	None	Very brief	Rare
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
Gullied land	D	High								
			Jan-Dec	---	---	---	---	None	---	None
104:										
Tohona	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Kimnoli	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Claysprings	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
105:										
Torriorthents	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
106:										
Torriorthents	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Badland	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
107:										
Towaoc	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Kwiavu	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
108:										
Towaoc	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
109:										
Tragmon	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Sheek	B	High								
			Jan-Dec	---	---	---	---	None	---	None
110:										
Tupuyci	B	Very low								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
Ives	B	Very low								
			July	---	---	---	---	None	Extremely brief	Very rare
			August	---	---	---	---	None	Extremely brief	Very rare
			September	---	---	---	---	None	Extremely brief	Very rare
			October	---	---	---	---	None	Extremely brief	Very rare
111:										
Typic Torriorthents	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
112:										
Ustic Torrifluvents-------	A	Very low								
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
113:										
Ustic Torriorthents-------	D	Medium								
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
Gullied land--------------	D	Very high								
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
114:										
Uzacol---------------------	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Zwicker--------------------	C	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Claysprings----------------	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
115:										
Uzona----------------------	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
116:										
Vessilla	D	High								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
117:										
Vosburg	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
118:										
Water	---	---								
			Jan-Dec	---	---	---	---	None	---	None
119:										
Water	---	---								
			Jan-Dec	---	---	---	---	None	---	None
Riverwash	D	Very high								
			January	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			February	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			March	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			April	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			May	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			June	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			July	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			August	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			September	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			October	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			November	0.0-2.0	>6.0	---	---	None	Very long	Frequent
			December	0.0-2.0	>6.0	---	---	None	Very long	Frequent
120:										
Wauquie	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
121:										
Wauquie	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Dolcan	D	Very high	Jan-Dec	---	---	---	---	None	---	None
122:										
Wauquie	B	High	Jan-Dec	---	---	---	---	None	---	None
Dolcan	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
123:										
Wetherill	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Atlatl	C	High	Jan-Dec	---	---	---	---	None	---	None
124:										
Wetherill	B	Low	Jan-Dec	---	---	---	---	None	---	None
Kucu	C	High	Jan-Dec	---	---	---	---	None	---	None
125:										
Wetherill	B	High	Jan-Dec	---	---	---	---	None	---	None
126:										
Wetherill	B	Low	Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
127:										
Wetherill	B	Medium	Jan-Dec	---	---	---	---	None	---	None
128:										
Wetherill	B	Low	Jan-Dec	---	---	---	---	None	---	None
129:										
Wetherill	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Wetoe	B	Medium	Jan-Dec	---	---	---	---	None	---	None
130:										
Wetoe	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Nees	D	High	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
131:										
Yarts	B	Very low	Jan-Dec	---	---	---	---	None	---	None
132:										
Yogovuci	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Taqoci	C	Low	Jan-Dec	---	---	---	---	None	---	None

Table 16.--Soil Features--Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
133:										
Zigzag	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Sideshow	C	Very high								
			Jan-Dec	---	---	---	---	None	---	None
134:										
Zyme	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None
135:										
Zyme	B	High								
			Jan-Dec	---	---	---	---	None	---	None
Katzine, dry	D	Medium								
			Jan-Dec	---	---	---	---	None	---	None
136:										
Zyme	D	Very high								
			Jan-Dec	---	---	---	---	None	---	None

Table 17.--Taxonomic Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Arabrab	Loamy, mixed, superactive, mesic Lithic Haplustalfs
Archuleta	Loamy, mixed, superactive, frigid, shallow Typic Haplustepts
Atlatl	Coarse-loamy, carbonatic, mesic Aridic Calciustepts
Awitava	Loamy-skeletal, mixed, active, mesic Petronodic Haplocalcids
Barx	Fine-loamy, mixed, superactive, mesic Ustic Calciargids
Battlerock	Fine-loamy, mixed, superactive, calcareous, mesic Typic Torrifluvents
Bebeevar	Sandy, mixed, mesic Oxyaquic Torrifluvents
Beclabito	Fine-loamy, mixed, active, mesic Haplic Ustic Natrargids
Benally	Fine-loamy, mixed, active, mesic Typic Natrigypsids
Blackston	Loamy-skeletal, mixed, superactive, mesic Typic Haplocalcids
Bluechief	Coarse-loamy, mixed, superactive, mesic Typic Haplocalcids
Cahona	Fine-silty, mixed, superactive, mesic Calcidic Haplustalfs
*Cahona	Fine-loamy, mixed, superactive, mesic Calcidic Haplustalfs
Cairn	Loamy-skeletal, carbonatic, mesic Calcic Argigypsids
Camac	Fine-loamy, mixed, active, mesic Typic Haplocambids
Chimrock	Fine-loamy, mixed, active, mesic Typic Argigypsids
Claysprings	Clayey, smectitic, calcareous, mesic, shallow Typic Torriorthents
Cowboy	Fine, smectitic, mesic Leptic Haplogypsids
Crosscan	Loamy-skeletal, mixed, superactive, calcareous, mesic, shallow Ustic Torriorthents
Decorock	Clayey-skeletal, smectitic, mesic Typic Argigypsids
Dolcan	Loamy, mixed, superactive, calcareous, mesic, shallow Aridic Ustorthents
Eagleye	Clayey, mixed, active, nonacid, mesic, shallow Ustic Torriorthents
Elias	Fine-loamy, mixed, superactive, mesic Ustic Natrargids
Escavada	Sandy, mixed, mesic Ustic Torrifluvents
Farb	Loamy, mixed, superactive, calcareous, mesic Lithic Torriorthents
Fardraw	Clayey-skeletal, smectitic, frigid Typic Argiustolls
Farview	Loamy, mixed, active, calcareous, mesic Lithic Ustic Torriorthents
Fluvaquents	Fluvaquents
Fluvents	Fluvents
Fruitland	Coarse-loamy, mixed, superactive, calcareous, mesic Typic Torriorthents
Gapmesa	Fine-loamy, mixed, superactive, mesic Ustic Haplargids
Gladel	Loamy, mixed, superactive, mesic Aridic Lithic Haplustepts
Greycap	Loamy, carbonatic, mesic, shallow Typic Torriorthents
Gypsey	Fine-loamy, carbonatic, mesic Typic Calcigypsids
Herm	Fine, smectitic, frigid Typic Argiustolls
Hope	Fine-silty, carbonatic, mesic Typic Calcigypsids
Hoskay	Fine, mixed, superactive, mesic Vertic Natrigypsids
Ives	Coarse-loamy, mixed, superactive, calcareous, mesic Typic Torrifluvents
Jeddito	Coarse-loamy, mixed, superactive, calcareous, mesic Typic Torriorthents
Juanalo	Loamy, mixed, superactive, calcareous, mesic Lithic Torriorthents
Katzine	Loamy-skeletal, mixed, superactive, mesic Aridic Calciustepts
*Katzine	Loamy-skeletal, mixed, superactive, mesic Ustic Haplocalcids
Kava	Clayey, smectitic, calcareous, mesic, shallow Vertic Torriorthents
Kimbeto	Fine-loamy, mixed, active, mesic Typic Calciargids
Kimnoli	Loamy, mixed, active, mesic Lithic Haplargids
Kucu	Fine-silty, mixed, superactive, mesic Calcidic Haplustalfs
Kwiavu	Fine-loamy, mixed, superactive, frigid Typic Haplustalfs
*Lazear	Loamy, mixed, superactive, calcareous, mesic Aridic Lithic Ustorthents
Lillings	Fine-silty, mixed, superactive, calcareous, mesic Ustic Torrifluvents
Littlehat	Fine-silty, mixed, semiactive, mesic Sodic Haplocambids
Littlewater	Loamy-skeletal, mixed, superactive, frigid Typic Paleustalfs
Longburn	Loamy-skeletal, mixed, superactive, mesic Lithic Haplustalfs
Mack	Fine-loamy, mixed, superactive, mesic Typic Calciargids
Mariano	Loamy-skeletal, carbonatic, mesic Typic Haplocalcids

Table 17.--Taxonomic Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Mikett	Fine-loamy, mixed, superactive, calcareous, mesic Oxyaquic Torriorthents
Mikim	Fine-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Monierco	Loamy, mixed, superactive, mesic, shallow Typic Haplargids
Morefield	Fine-silty, mixed, superactive, mesic Aridic Paleustalfs
Nataani	Coarse-silty, mixed, semiactive, mesic Typic Haplogypsids
Nees	Loamy-skeletal, mixed, superactive, mesic Lithic Haplustalfs
Nomad	Fine-loamy, carbonatic, mesic Typic Haplocalcids
Oagamati	Fine, smectitic, mesic Vertic Natrigypsids
Pagayvay	Loamy-skeletal, mixed, active, mesic Ustifluventic Haplocambids
Patel	Fine, mixed, active, mesic Typic Natrigypsids
Persayo	Loamy, mixed, active, calcareous, mesic, shallow Typic Torriorthents
Picliff	Loamy, mixed, active, mesic, shallow Leptic Haplogypsids
Pogo	Fine-loamy, mixed, superactive, calcareous, mesic Typic Fluvaquents
Prater	Fine, mixed, superactive, mesic Aridic Haplustalfs
Pulpit	Fine-silty, mixed, superactive, mesic Aridic Haplustalfs
Ramper	Fine-loamy, mixed, superactive, calcareous, mesic Aridic Ustifluvents
Ravola	Fine-silty, mixed, active, calcareous, mesic Typic Torrifluvents
*Ravola	Fine-loamy, mixed, active, calcareous, mesic Typic Torrifluvents
Redlands	Fine-loamy, mixed, superactive, mesic Typic Haplargids
Rizno	Loamy, mixed, superactive, calcareous, mesic Lithic Ustic Torriorthents
Romberg	Loamy-skeletal, mixed, superactive, mesic Ustic Haplargids
Roubideau	Fine-silty, mixed, superactive, mesic Aridic Haplustalfs
Salamander	Loamy-skeletal, mixed, active, mesic Typic Calcigypsids
*Sharps	Fine-silty, mixed, superactive, mesic Ustic Haplargids
Sheek	Loamy-skeletal, mixed, superactive, frigid Typic Haplustalfs
Sheppard	Mixed, mesic Typic Torripsamments
Sideshow	Fine, smectitic, mesic Aridic Haplusterts
Simpatico	Fine-silty, mixed, superactive, mesic Pachic Argiustolls
Snapill	Fine-silty, mixed, superactive, mesic Ustic Calciargids
Stephouse	Loamy, mixed, superactive, mesic Lithic Calciustepts
Strych	Loamy-skeletal, mixed, superactive, mesic Ustic Haplocalcids
Taqoci	Fine-loamy, mixed, active, mesic Typic Natrigypsids
Tocito	Fine-silty, mixed, active, calcareous, mesic Typic Torriorthents
Tohona	Fine, smectitic, mesic Vertic Natrigypsids
Torriorthents	Torriorthents
Towaoc	Loamy-skeletal, mixed, superactive, frigid Typic Haplustalfs
Tragmon	Fine-loamy, mixed, superactive, frigid Typic Argiustolls
Tupuyci	Loamy-skeletal, mixed, active, calcareous, mesic Typic Torrifluvents
Typic Torriorthents	Typic Torriorthents
Ustic Torrifluvents	Ustic Torrifluvents
Ustic Torriorthents	Ustic Torriorthents
Uzacol	Fine, smectitic, mesic Vertic Natrargids
Uzona	Fine, smectitic, mesic Typic Haplosalids
Vessilla	Loamy, mixed, active, calcareous, mesic Aridic Lithic Ustorthents
Vosburg	Fine-loamy, mixed, superactive, mesic Pachic Argiustolls
Walrees	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, calcareous, mesic Oxyaquic Ustifluvents
Wauquie	Loamy-skeletal, mixed, superactive, mesic Aridic Haplustalfs
Wetherill	Fine-silty, mixed, superactive, mesic Aridic Haplustalfs
Wetoe	Loamy-skeletal, mixed, superactive, mesic Aridic Haplustalfs
Yarts	Coarse-loamy, mixed, superactive, calcareous, mesic Ustic Torriorthents
Yogovuci	Fine-loamy, mixed, active, mesic Typic Argigypsids
Zigzag	Clayey, smectitic, calcareous, mesic, shallow Aridic Ustorthents
Zwicker	Fine, smectitic, mesic Chromic Haplotorrerts
Zyme	Clayey, smectitic, calcareous, mesic, shallow Ustic Torriorthents

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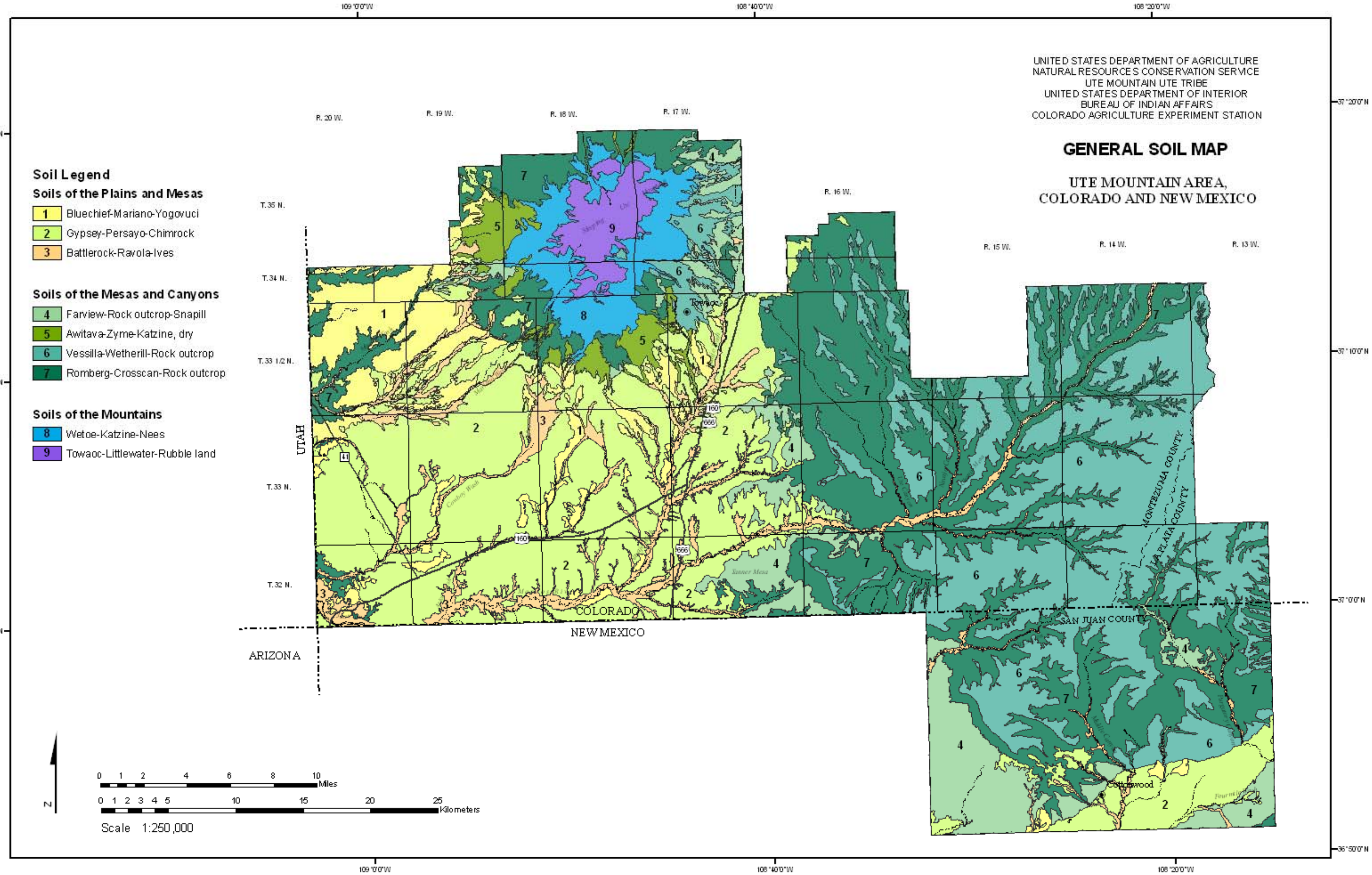

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
UTE MOUNTAIN UTE TRIBE
UNITED STATES DEPARTMENT OF INTERIOR
BUREAU OF INDIAN AFFAIRS
COLORADO AGRICULTURE EXPERIMENT STATION
GENERAL SOIL MAP
UTE MOUNTAIN AREA,
COLORADO AND NEW MEXICO
Soil Legend
Soils of the Plains and Mesas
1 Bluechief-Mariano-Yogovuci
2 Gypsey-Persayo-Chimrock
3 Battlerock-Ravola-Ives
Soils of the Mesas and Canyons
4 Farview-Rock outcrop-Snapill
5 Awitava-Zyme-Katzine, dry
6 Vessilla-Wetherill-Rock outcrop
7 Romberg-Crosscan-Rock outcrop
Soils of the Mountains
8 Wetoe-Katzine-Nees
9 Towaoc-Littlewater-Rubble land
UTAH
COLORADO
NEW MEXICO
ARIZONA
SAN JUAN COUNTY
MONTEZUMA COUNTY
LA PLATA COUNTY
Towaoc
Cottonwood
Miles
Kilometers
Scale 1:250,000
N

INDEX TO MAP SHEETS

UTE MOUNTAIN AREA, COLORADO
PARTS OF
LA PLATA AND MONTEZUMA COUNTIES
SAN JUAN COUNTY, NEW MEXICO

1 0 1 2 3
MILES

1 0 1 2 3 4 5 6
KILOMETERS

SCALE = 1:140000

N

SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA, COLORADO AND NEW MEXICO

COLORADO AGRICULTURAL EXPERIMENT STATION, COLORADO STATE UNIVERSITY
UTE MOUNTAIN INDIAN TRIBE; BUREAU OF INDIAN AFFAIRS
DOLORES SOIL CONSERVATION DISTRICT
SAN JUAN SOIL AND WATER CONSERVATION DISTRICT
NEW MEXICO AGRICULTURAL EXPERIMENT STATION, NEW MEXICO STATE UNIVERSITY

SOIL LEGEND

SYMBOL	NAME
1	Arabrab-Longburn complex, 3 to 15 percent slopes
2	Awitava extremely gravelly very fine sandy loam, 3 to 9 percent slopes
3	Badland-Rock outcrop complex
4	Barx-Gapmesa complex, 2 to 6 percent slopes
5	Barx loam, 6 to 12 percent slopes
6	Barx very fine sandy loam, 1 to 4 percent slopes
7	Battlerock clay loam, 0 to 6 percent slopes
8	Battlerock silt loam, moderately saline, sodic, 0 to 3 percent slopes
9	Battlerock silty clay loam, slightly saline, sodic, 1 to 3 percent slopes
10	Bebeevar-Walrees complex, 0 to 2 percent slopes
11	Benally fine sandy loam, 1 to 5 percent slopes
12	Blackston-Camac-Rock outcrop complex, 0 to 60 percent slopes
13	Bluechief fine sandy loam, 1 to 3 percent slopes
14	Bluechief fine sandy loam, 3 to 6 percent slopes
15	Bluechief-Rock outcrop complex, 1 to 12 percent slopes
16	Cahona-Pulpit complex, 3 to 9 percent slopes
17	Cahona-Zigzag complex, 5 to 45 percent slopes
18	Camac-Kimbeto-Badland association, 0 to 50 percent slopes
19	Chimrock loam, sodic, 1 to 3 percent slopes
20	Chimrock very fine sandy loam, 1 to 3 percent slopes
21	Claysprings-Badland complex, 35 to 60 percent slopes
22	Claysprings very stony clay loam, 12 to 65 percent slopes
23	Cowboy clay, 1 to 3 percent slopes
24	Cowboy-Kava complex, 1 to 3 percent slopes
25	Cowboy-Kava complex, 3 to 12 percent slopes
26	Decorock-Salamander association, 1 to 50 percent slopes
27	Decorock-Salamander-Badlands association, 3 to 60 percent slopes
28	Dolcan-Kucu association, 3 to 25 percent slopes
29	Elias-Yarts complex, 1 to 6 percent slopes
30	Farb-Rock outcrop complex, 3 to 12 percent slopes
31	Farb-Rock outcrop-Fruitland complex, 1 to 45 percent slopes
32	Fardraw very cobbly loam, 0 to 9 percent slopes
33	Farview-Beclabito-Rock outcrop complex, 1 to 10 percent slopes
34	Farview-Rock outcrop complex, 1 to 10 percent slopes
35	Fluvents-Fluvaquents complex, 0 to 3 percent slopes
36	Gladel-Pulpit complex, 3 to 9 percent slopes
37	Greycap-Nomad complex, 1 to 6 percent slopes
38	Gypsey sandy clay loam, 3 to 6 percent slopes
39	Gypsey sandy clay loam, 6 to 12 percent slopes
40	Herm loam, 3 to 25 percent slopes
41	Hope silty clay loam, 1 to 6 percent slopes
42	Hoskay-Patel-Badland complex, 1 to 25 percent slopes
43	Ives sandy loam, 1 to 3 percent slopes
44	Jeddito-Escavada association, 0 to 3 percent slopes
45	Jeddito loamy fine sand, 0 to 2 percent slopes
46	Juanalo gravely fine sandy loam, 1 to 6 percent slopes
47	Katzine very gravelly fine sandy loam, 15 to 45 percent slopes
48	Lazear-Rock outcrop complex, 12 to 65 percent slopes
49	Lillings silty clay loam, 3 to 6 percent slopes
50	Littlehat-Persayo-Badland complex, 3 to 45 percent slopes
51	Littlehat-Persayo-Nataani complex, 1 to 15 percent slopes
52	Littlewater-Rubble land-Rock outcrop complex, 25 to 90 percent slopes
53	Longburn-Rock outcrop complex, 10 to 45 percent slopes
54	Longburn-Rock outcrop complex, 45 to 80 percent slopes
55	Mack fine sandy loam, 0 to 6 percent slopes
56	Mack fine sandy loam, 1 to 3 percent slopes
57	Mack fine sandy loam, 3 to 6 percent slopes
58	Mariano very fine sandy loam, 1 to 3 percent slopes
59	Mariano very fine sandy loam, 3 to 6 percent slopes
60	Mariano very fine sandy loam, 3 to 6 percent slopes, stony
61	Mikett clay loam, saline-sodic, 0 to 3 percent slopes
62	Mikett clay loam, 0 to 3 percent slopes
63	Mikim clay loam, 1 to 3 percent slopes
64	Mikim loam, 3 to 6 percent slopes
65	Monierco fine sandy loam, 3 to 12 percent slopes
66	Morefield loam, 1 to 3 percent slopes
67	Morefield loam, 3 to 6 percent slopes
68	Nataani-Yogovuci complex, 3 to 9 percent slopes
69	Oagamati silty clay loam, 1 to 6 percent slopes
70	Pagayvay extremely gravelly coarse sandy loam, 1 to 6 percent slopes
71	Persayo-Cairn-Patel complex, 1 to 25 percent slopes
72	Persayo gravelly loam, 12 to 45 percent slopes
73	Persayo silty clay loam, 3 to 12 percent slopes
74	Persayo-Yogovuci association, 1 to 12 percent slopes
75	Picliff silty clay loam, 3 to 9 percent slopes
76	Pogo loam, 0 to 2 percent slopes
77	Prater-Dolcan complex, 25 to 60 percent slopes
78	Pulpit loam, 3 to 12 percent slopes
79	Ramper loam, 0 to 3 percent slopes
80	Ravola clay loam, 0 to 3 percent slopes
81	Ravola silt loam, 1 to 3 percent slopes
82	Ravola very fine sandy loam, 1 to 3 percent slopes
83	Redlands fine sandy loam, 1 to 3 percent slopes
84	Redlands fine sandy loam, 3 to 6 percent slopes
85	Rizno-Gapmesa complex, 3 to 9 percent slopes
86	Rock outcrop
87	Rock outcrop-Farview complex, 10 to 25 percent slopes
88	Romberg-Crosscan complex, 6 to 25 percent slopes
89	Romberg-Crosscan-Rock outcrop complex, 25 to 80 percent slopes
90	Roubideau loam, 1 to 6 percent slopes
91	Sharps loam, dry, 6 to 12 percent slopes
92	Sharps, dry-Gapmesa complex, 6 to 12 percent slopes
93	Sheek-Archuleta complex, 6 to 25 percent slopes
94	Sheek-Archuleta-Rock outcrop complex, 25 to 80 percent slopes
95	Sheek-Archuleta-Rock outcrop complex, 25 to 80 percent slopes, north aspect
96	Sheppard fine sand, 1 to 6 percent slopes
97	Sideshow silty clay loam, 0 to 3 percent slopes
98	Sideshow silty clay loam, 3 to 6 percent slopes
99	Simpatico loam, 1 to 3 percent slopes
100	Snapill very fine sandy loam, 1 to 6 percent slopes
101	Stephouse-Rock outcrop complex, 3 to 10 percent slopes
102	Strych-Eagleye-Rock outcrop complex, 15 to 70 percent slopes
103	Tocito-Gullied land complex, 1 to 3 percent slopes
104	Tohona-Kimnoli-Claysprings complex, 2 to 45 percent slopes
105	Torriorthents, 12 to 65 percent slopes
106	Torriorthents-Badland complex, 25 to 100 percent slopes
107	Towaoc-Kwiavu complex, 6 to 35 percent slopes
108	Towaoc very gravelly sandy loam, 35 to 75 percent slopes
109	Tragmon-Sheek complex, 12 to 25 percent slopes
110	Tupuyci-Ives complex, 1 to 3 percent slopes
111	Typic Torriorthents-Rock outcrop complex, 12 to 80 percent slopes
112	Ustic Torrifluvents, 0 to 3 percent slopes
113	Ustic Torriorthents-Gullied land complex, 1 to 60 percent slopes
114	Uzacol-Zwicker-Claysprings complex, 3 to 12 percent slopes
115	Uzona loam, 1 to 6 percent slopes
116	Vessilla-Rock outcrop complex, 5 to 25 percent slopes
117	Vosburg fine sandy loam, 3 to 8 percent slopes
118	Water
119	Water-Riverwash complex
120	Wauquie very stony loam, 6 to 25 percent slopes
121	Wauquie-Dolcan complex, 6 to 25 percent slopes
122	Wauquie-Dolcan-Rock outcrop complex, 25 to 80 percent slopes
123	Wetherill-Atlatl association, 1 to 15 percent slopes
124	Wetherill-Kucu complex, 3 to 6 percent slopes
125	Wetherill loam, 3 to 6 percent slopes
126	Wetherill silt loam, 1 to 3 percent slopes
127	Wetherill silt loam, 3 to 6 percent slopes
128	Wetherill silt loam, 6 to 12 percent slopes
129	Wetherill-Wetoe complex, 3 to 12 percent slopes
130	Wetoe-Nees-Rock outcrop complex, 35 to 90 percent slopes
131	Yarts fine sandy loam, 1 to 6 percent slopes
132	Yogovuci-Taqoci complex, 2 to 6 percent slopes
133	Zigzag-Sideshow complex, 25 to 65 percent slopes
134	Zyme gravelly clay loam, 3 to 12 percent slopes
135	Zyme-Katzine, dry, complex, 15 to 75 percent slopes
136	Zyme very channery clay loam, 12 to 65 percent slopes

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES
- National, state, or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park)
- Land grant
- Limit of soil survey (label) and/or denied access area
- Field sheet matchline and neatline
- Previously published survey

OTHER BOUNDARY
- Airport, airfield
- Cemetery
- City/county park

STATE COORDINATE TICK
1 890 000 FEET

LAND DIVISION CORNER
(section and land grants)

GEOGRAPHIC COORDINATE TICK

TRANSPORTATION
- Divided roads
- Other roads
- Trail

ROAD EMBLEMS AND DESIGNATIONS
- Interstate (173; 79 345)
- Federal (287; 410 224)
- State (52; 52 347)
- County, farm or ranch (1283)

RAILROAD

POWER TRANSMISSION LINE

PIPELINE

FENCE

LEVEES
- Without road
- With road
- With railroad
- Single side slope (showing actual feature location)

DAMS
- Medium or small

LANDFORM FEATURES
- Prominent hill or peak
- Soil sampling site

MISCELLANEOUS CULTURAL FEATURES
- Farmstead, house
- Church
- School
- Other religion (Mt Carmel)
- Located object (Ranger Station)
- Tank (petroleum)
- Lookout tower
- Oil and/or natural gas wells
- Windmill
- Lighthouse

HYDROGRAPHIC FEATURES

STREAMS
- Perennial stream, double line
- Perennial stream, single line (Label only)
- Intermittent stream (Label only)
- Drainage end (Label only)

DRAINAGE AND IRRIGATION
- Double-line canal (label) (CANAL)
- Perennial drainage and/or irrigation ditch (Label only)
- Intermittent drainage and/ or irrigation ditch (Label only)

SMALL LAKES, PONDS, AND RESERVOIRS
- Perennial water
- Miscellaneous water
- Flood pool line (FLOOD POOL LINE)

MISCELLANEOUS WATER FEATURES
- Spring
- Well, artesian
- Well, irrigation

SPECIAL SYMBOLS FOR SOIL SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS (1 10)

LANDFORM FEATURES
- Bedrock escarpment
- Other than bedrock escarpment
- Short steep slope
- Gully
- Depression, closed
- Sinkhole
- Borrow pit
- Gravel pit
- Mine or quarry
- Landfill

MISCELLANEOUS SURFACE FEATURES
- Blowout
- Clay spot
- Gravelly spot
- Lava spot
- Marsh or swamp
- Rock outcrop
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip
- Sodic spot
- Spoil area
- Stony spot
- Wet spot
- Very stony spot

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
BOWDISH CANYON QUADRANGLE
SHEET NUMBER 1 OF 24

109°00′00″ — 108°57′30″ — 108°55′00″ — 108°52′30″

R. 20 W. R. 19 W. — R. 19 W. R. 18 W.

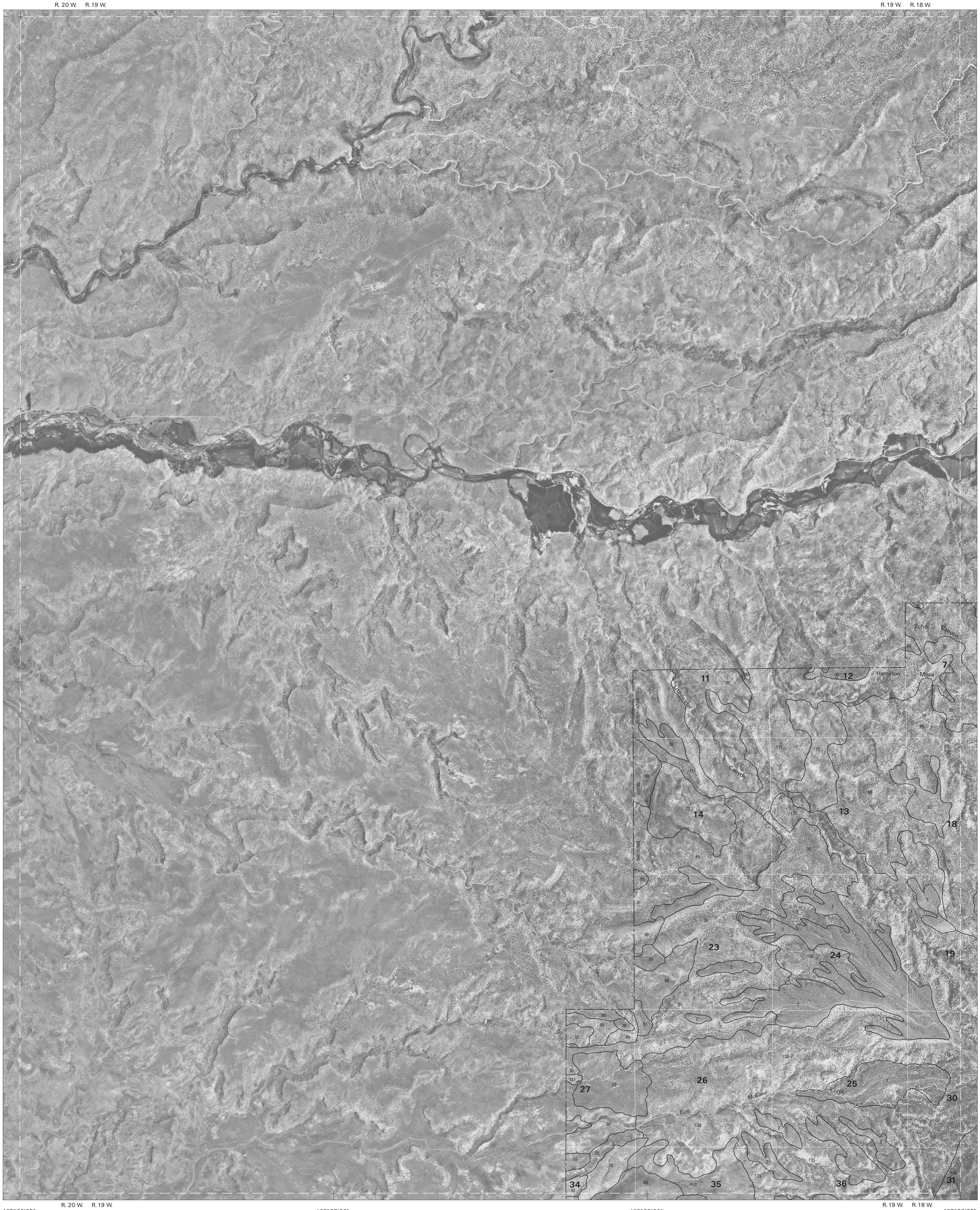
37°22′30″

37°20′00″

T. 36 N.
T. 35 N.

37°17′30″

37°15′00″



Joins sheet 2, Battle Rock

Joins sheet 5, Peters Nipple

Joins sheet 6, Mariano Wash West

Joins sheet 7, Mariano Wash East

This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.Base maps are orthophotographs prepared by the U.S.Department of Interior, Geological Survey, from 1991-1997 aerial photography. Hydrography, culture, and public land survey system (PLSS) information were acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

BOWDISH CANYON, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 1 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
BATTLE ROCK QUADRANGLE
SHEET NUMBER 2 OF 24

108°52′30″ 108°50′00″ 108°47′30″ 108°45′00″

R. 18 W. R. 17 W.

37°22′30″ 37°20′00″ 37°17′30″ 37°15′00″

T. 36 N.
T. 35 N.

UTE MOUNTAIN INDIAN RESERVATION

Echo Canyon
Hamilton Mesa
Finley Canyon
Burro Creek
Pine Creek
Marble Mountain
Ute Peak
Littlewater Creek
East McElmo Creek
Black Mountain
MOUNTAIN
UTE
SLEEPING UTE
Horse Mountain
Cottonwood Wash

Joins sheet 1, Bowdish Canyon
Joins sheet 3, Mud Creek
Joins sheet 6, Mariano Wash West
Joins sheet 7, Mariano Wash East
Joins sheet 8, Towaoc

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

BATTLE ROCK, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 2 OF 24

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
MUD CREEK QUADRANGLE
SHEET NUMBER 3 OF 24

108°45′00″ 108°42′30″ 108°40′00″ 108°37′30″

R. 17 W. R. 16 W.

37°22′30″ 37°20′00″ 37°17′30″ 37°15′00″

T. 36 N.
T. 35 N.

Gifford Knoll
Jessup Canyon
Aztec Divide
UTE MOUNTAIN INDIAN RESERVATION

Joins sheet 2, Battle Rock
Joins sheet 4, Cortez
Joins sheet 7, Mariano Wash East
Joins sheet 8, Towaoc
Joins sheet 9, Wetherill Mesa

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

MUD CREEK, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 3 OF 24

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
CORTEZ QUADRANGLE
SHEET NUMBER 4 OF 24

108°37′30″ 108°35′00″ R. 16 W. R. 15 W. 108°32′30″ 108°30′00″

37°22′30″ 37°20′00″ 37°17′30″ 37°15′00″

T. 36 N.
T. 35 N.

Joins sheet 3, Mud Creek

Joins sheet 8, Towaoc

Joins sheet 9, Wetherill Mesa

Joins sheet 10, Moccasin Mesa

UTE MOUNTAIN INDIAN RESERVATION

Krueger Point

Mesa Verde

North Rim

West Fork Rock Canyon

East Fork Horse Canyon

West Fork Torreas Canyon

27 28 26 25 33 34 35 36

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

CORTEZ, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 4 OF 24

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
PETERS NIPPLE QUADRANGLE
SHEET NUMBER 5 OF 24

Joins sheet 1, Bowdish Canyon

109°07′30″ 109°05′00″ 109°02′30″ 109°00′00″

R. 26 E. R. 20 W.

37°15′00″ 37°12′30″ 37°10′00″ 37°07′30″

T. 35 N.
T. 34 N.
T. 34 N.
T. 33 1/2 N.
T. 33 1/2 N.
T. 33 N.

UTE MOUNTAIN INDIAN RESERVATION
McElmo Creek East
Wash
Marble Wash
Coyote Wash
Mariano Wash

SAN JUAN COUNTY, UTAH
MONTEZUMA COUNTY, COLORADO

Joins sheet 6, Mariano Wash West

Joins sheet 12, Aneth SE

Joins sheet 13, Sentinel Peak SW

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

PETERS NIPPLE, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 5 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
MARIANO WASH WEST QUADRANGLE
SHEET NUMBER 6 OF 24

Joins sheet 2, Battle Rock

109°00′00″ — 108°57′30″ — 108°55′00″ — 108°52′30″

R. 20 W. — R. 19 W. — R. 18 W.

37°15′00″ — T. 35 N. — T. 34 N.

37°12′30″ — T. 34 N. — T. 33 1/2 N.

37°10′00″ — T. 33 1/2 N. — T. 33 N.

37°07′30″

Joins sheet 1, Bowdish Canyon

Joins sheet 5, Peters Nipple

Joins sheet 7, Mariano Wash East

Joins sheet 12, Aneth SE

Joins sheet 13, Sentinel Peak SW

Joins sheet 14, Sentinel Peak SE

UTE MOUNTAIN INDIAN RESERVATION

E. McElmo Creek · Wash · Marble · Wash · Coyote · Wash · Marble · Wash · Coyote · Wash · Mariano · Wash · Mariano

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

MARIANO WASH WEST, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 6 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

108°52′30″ 108°50′00″ 108°47′30″ 108°45′00″

Joins sheet 2, Battle Rock

R. 18 W. R. 17 W.

37°15′00″

T. 35 N.
T. 34 N.

T. 34 N.
T. 33 1/2 N.

37°12′30″

37°10′00″

T. 33 1/2 N.
T. 33 N.

37°07′30″

R. 19 W. R. 18 W.

Joins sheet 6, Mariano Wash West

Joins sheet 8, Towaoc

Joins sheet 13, Sentinel Peak SW

Joins sheet 14, Sentinel Peak SE

Joins sheet 15, Tanner Mesa

Sun Dance Ground

SLEEPING UTE MOUNTAIN

UTE MOUNTAIN INDIAN RESERVATION

Mariano Wash

Cottonwood Wash

Aztec Wash

Cowboy Wash

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

MARIANO WASH EAST, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 7 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

108° 45′ 00″ — 108° 42′ 30″ — Joins sheet 3, Mud Creek — 108° 40′ 00″ — 108° 37′ 30″

R. 18 W. — R. 17 W. — R. 16 W.

37° 15′ 00″ — T. 35 N. / T. 34 N. — 37° 12′ 30″ — T. 34 N. / T. 33 1/2 N. — 37° 10′ 00″ — T. 33 1/2 N. / T. 33 N. — 37° 07′ 30″

Towaoc — Fisher Creek — Cottonwood Wash — Navajo Draw — Ismay Wash — West Rim — West Fork Middle Fork Ute Canyon — MESA VERDE — UTE MOUNTAIN INDIAN RESERVATION — 160 — 666

Joins sheet 7, Mariano Wash East

Joins sheet 9, Wetherill Mesa

Joins sheet 14, Sentinel Peak SE

Joins sheet 15, Tanner Mesa

Joins sheet 16, Mound Canyon

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1 MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETERS

TOWAOC, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 8 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 3, Mud Creek

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
WETHERILL MESA QUADRANGLE
SHEET NUMBER 9 OF 24

Joins sheet 4, Cortez

108°37′30″ 108°35′00″ 108°32′30″ 108°30′00″

R. 16 W. R. 15 W.

37°15′00″ T. 35 N. T. 34 N.

37°12′30″

37°10′00″

T. 34 N. T. 33 N. 37°07′30″

Joins sheet 8, Towaoc

Joins sheet 10, Moccasin Mesa

Joins sheet 15, Tanner Mesa

Joins sheet 16, Moqui Canyon

Joins sheet 17, Greasewood Canyon

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

WETHERILL MESA, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 9 OF 24

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
MOCCASIN MESA QUADRANGLE
SHEET NUMBER 10 OF 24

Joins sheet 4, Cortez

108°30′00″ 108°27′30″ 108°25′00″ 108°22′30″

R. 15 W. R. 14 W.

37°15′00″

T. 35 N.
T. 34 N.

37°12′30″

37°10′00″

T. 34 N.
T. 33 N.

37°07′30″

Joins sheet 9, Wetherill Mesa

Joins sheet 11, Trail Canyon

Joins sheet 16, Moqui Canyon

Joins sheet 17, Greasewood Canyon

Joins sheet 18, Red Horse Gulch

UTE MOUNTAIN INDIAN RESERVATION

MOCCASIN MESA

CHAPIN MESA

Lewis Mesa

Moccasin Head

Soda Point

Prater Canyon

Morfield Canyon

Ridge

Waters Canyon

MESA

WHITES Canyon

BIG MESA Canyon

Weaver Canyon

Whites Canyon

Cliff Canyon

Pine Canyon

Soda Canyon

Pool Canyon

Mancos River

Lewis Creek

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

MOCCASIN MESA, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 10 OF 24

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UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
TRAIL CANYON QUADRANGLE
SHEET NUMBER 11 OF 24

108°22′30″ 108°20′00″ 108°17′30″ 108°15′00″

R. 14 W. R. 13 W.

37°15′00″ 37°12′30″ 37°10′00″ 37°07′30″

T. 35 N.
T. 34 N.
T. 34 N.
T. 33 N.

Joins sheet 10, Moccasin Mesa

Joins sheet 17, Grasswood Canyon

Joins sheet 18, Red Horse Gulch

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

TRAIL CANYON, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 11 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
ANETH SE QUADRANGLE (OVERSIZED)
SHEET NUMBER 12 OF 24

Joins sheet 5, Peters Nipple

Joins sheet 6, Mariano Wash West

Joins sheet 13, Sentinel Peak SW

109° 07′ 30″ | 109° 05′ 00″ | R. 26 E. | R. 20 W. | 109° 02′ 30″ | 109° 00′ 00″

37° 07′ 30″ | 37° 05′ 00″ | 37° 02′ 30″ | 37° 00′ 00″

T. 33 N.
T. 32 N.

UTE MOUNTAIN INDIAN RESERVATION

SAN JUAN COUNTY UTAH
MONTEZUMA COUNTY COLORADO

APACHE COUNTY ARIZONA
MONTEZUMA COUNTY COLORADO
SAN JUAN COUNTY NEW MEXICO

Cowboy Wash

SAN JUAN RIVER

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

ANETH SE (OVERSIZED), COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 12 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
SENTINEL PEAK SW QUADRANGLE (OVERSIZED)
SHEET NUMBER 13 OF 24

Joins sheet 5, Pietes Nipple
Joins sheet 6, Mariano Wash West
Joins sheet 7, Mariano Wash East
Joins sheet 12, Aneth SE
Joins sheet 14, Sentinel Peak SE

109°00′00″ R. 20 W. R. 19 W. 108°57′30″ 108°55′00″ 108°52′30″

37°07′30″ 37°05′00″ 37°02′30″ 37°00′00″

T. 33 N.
T. 32 N.

UTE MOUNTAIN
INDIAN RESERVATION

Cowboy Wash
Mancos River
Aztec Wash

MONTEZUMA COUNTY COLORADO
SAN JUAN COUNTY UTAH

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES

FEET

KILOMETERS

SENTINEL PEAK SW (OVERSIZED), COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 13 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
SENTINEL PEAK SE QUADRANGLE (OVERSIZED)
SHEET NUMBER 14 OF 24

Joins sheet 6, Mariano Wash West

Joins sheet 7, Mariano Wash East

Joins sheet 8, Towaoc

Joins sheet 13, Sentinel Peak SW

Joins sheet 15, Tanner Mesa

108°52′30″ — 108°50′00″ — 108°47′30″ — 108°45′00″

37°07′30″ — 37°05′00″ — 37°02′30″ — 37°00′00″

R. 19 W. — R. 18 W.

T. 33 N.
T. 32 N.

UTE MOUNTAIN INDIAN RESERVATION

MONTEZUMA COUNTY COLORADO
SAN JUAN COUNTY UTAH

Cowboy Wash · Aztec Wash · Navajo River · Mancos River · Yellow Jacket Canyon · Tanner Canyon

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

MILES: 1 0 1

FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000

KILOMETERS: 1 0 1

SENTINEL PEAK SE (OVERSIZED), COLORADO

7.5 MINUTE SERIES
SHEET NUMBER 14 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 7, Mariano Wash East

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
TANNER MESA QUADRANGLE (OVERSIZED)
SHEET NUMBER 15 OF 24

Joins sheet 8, Towaoc

Joins sheet 9, Wetherill Mesa

108° 45′ 00″ — R. 18 W. — R. 17 W. — 108° 42′ 30″ — 108° 40′ 00″ — R. 17 W. — R. 16 W. — 108° 37′ 30″

37° 07′ 30″

37° 05′ 00″

37° 02′ 30″

37° 00′ 00″

T. 33 N.
T. 32 N.

Joins sheet 14, Sentinel Peak SE

Joins sheet 16, Moqui Canyon

Joins sheet 19, Palmer Mesa

Wash
Navajo
Short
Mesa
Chimney
Rock
West
Draw
Cowboy
Mesa
Canyon
Chimney Rock
UTE MOUNTAIN INDIAN RESERVATION
Mancos
River
MESA
TANNER
Tanner
Canyon
North
Tanner
Reservoir

MONTEZUMA COUNTY COLORADO
SAN JUAN COUNTY UTAH

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

TANNER MESA (OVERSIZED), COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 15 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 8, Towaoc

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA, COLORADO & NEW MEXICO
MOQUI CANYON QUADRANGLE
SHEET NUMBER 16 OF 24

Joins sheet 10, Moccasin Mesa

108° 37′ 30″ — 108° 35′ 00″ — 108° 32′ 30″ — 108° 30′ 00″

Joins sheet 9, Wetherill Mesa

R. 16 W. R. 15 W.

37° 07′ 30″ — 37° 05′ 00″ — 37° 02′ 30″ — 37° 00′ 00″

T. 33 N.
T. 32 N.

Joins sheet 15, Tanner Mesa

Joins sheet 17, Greasewood Canyon

Joins sheet 19, Palmer Mesa

Joins sheet 20, Hellers Point

UTE MOUNTAIN INDIAN RESERVATION

West Fork Ute Canyon
West Ute Mesa
Ute Canyon
East Eagle Eye Mesa
Navajo Canyon
Eagle Eye Mesa
Ute Canyon
Navajo Canyon
Chapin Mesa
Mancos River
Mancos River
Mancos River
Grass Canyon
Grass Canyon Road
Moqui Canyon
Moqui Canyon
Grass Canyon Road

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

MOQUI CANYON, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 16 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 9, Wetherill Mesa

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
GREASEWOOD CANYON QUADRANGLE
SHEET NUMBER 17 OF 24

Joins sheet 11, Trail Canyon

Joins sheet 10, Moccasin Mesa

108° 30′ 00″ | 108° 27′ 30″ | 108° 25′ 00″ | 108° 22′ 30″

R. 15 W. R. 14 W.

37° 07′ 30″ | 37° 05′ 00″ | 37° 02′ 30″ | 37° 00′ 00″

Joins sheet 16, Moqui Canyon

Joins sheet 18, Red Horse Gulch

T. 33 N.
T. 32 N.

Joins sheet 19, Palmer Mesa

Joins sheet 20, Heifer Point

Joins sheet 21, Purgatory Canyon

UTE MOUNTAIN INDIAN RESERVATION

Soda Point
Chapin Mesa
Johnson Canyon
Lion Canyon
Black Canyon
Grass Canyon
Greasewood Canyon
Salt Wash
North Canyon
Grass Canyon Road
MONTEZUMA COUNTY
LA PLATA COUNTY

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NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

GREASEWOOD CANYON, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 17 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

108° 22′ 30″ — 108° 20′ 00″ — 108°17′30″ — 108°15′00″

Joins sheet 11, Trail Canyon

R. 14 W. R. 13 W.

37° 07′ 30″ — 37° 05′ 00″ — 37° 02′ 30″ — 37° 00′ 00″

Joins sheet 17, Greasewood Canyon

T. 33 N.
T. 32 N.

Joins sheet 20, Heifer Point

Joins sheet 21, Purgatory Canyon

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

RED HORSE GULCH (OVERSIZED), COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 18 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

Joins sheet 15, Tanner Mesa

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
PALMER MESA QUADRANGLE
SHEET NUMBER 19 OF 24

Joins sheet 17, Greasewood Canyon

108°37′30″ 108°35′00″ 108°32′30″ 108°30′00″

Joins sheet 16, Moqui Canyon

R. 16 W. R. 15 W.

37°00′00″ 36°57′30″ 36°55′00″ 36°52′30″

MONTEZUMA COUNTY COLORADO
SAN JUAN COUNTY NEW MEXICO

UTE MOUNTAIN RESERVATION

Salt Canyon
North Salt Wash
Creek
Soils
Thieving Rock
Rocky Canyon
Standing Tree Canyon
Eagle Nest Arroyo

Joins sheet 20, Heifer Point

Joins sheet 22, Chimney Rock

Joins sheet 23, Waterflow

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

PALMER MESA, COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 19 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
HEIFER POINT QUADRANGLE
SHEET NUMBER 20 OF 24

Joins sheet 16, Mogul Canyon
Joins sheet 17, Greasewood Canyon
Joins sheet 18, Red Horse Gulch
Joins sheet 19, Palmer Mesa
Joins sheet 21, Purgatory Canyon
Joins sheet 22, Chimney Rock
Joins sheet 23, Waterflow
Joins sheet 24, Youngs Lake

108°30′00″ 108°27′30″ 108°25′00″ 108°22′30″

37°00′00″ 36°57′30″ 36°55′00″ 36°52′30″

R. 15 W. R. 14 W.

MONTEZUMA COUNTY, COLORADO
SAN JUAN COUNTY, NEW MEXICO

North Salt Canyon
UTE MOUNTAIN INDIAN RESERVATION
Straight Canyon
Cottonwood Canyon
Picket Canyon
Heifer Point
Shumway Arrowo
Eagle Nest Arrowo
Wespwater Arrowo
Cottonwood Canyon
Straight Canyon

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

HEIFER POINT, NEW MEXICO
7.5 MINUTE SERIES
SHEET NUMBER 20 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

108°22′30″ 108°20′00″ 108°17′30″ 108°15′00″

37°00′00″ 36°57′30″ 36°55′00″ 36°52′30″

Joins sheet 18, Red Horse Gulch

Joins sheet 20, Heifer Point

Joins sheet 23, Waterflow

Joins sheet 24, Youngs Lake

SAN JUAN COUNTY NEW MEXICO

UTE MOUNTAIN INDIAN RESERVATION

Barker Dome
Barker Arroyo
Little Barker Arroyo
South Thomas Canyon
North Jones Canyon
Middle Jones Canyon
South Jones Canyon
North Buzan Canyon
South Buzan Canyon
Oak Springs Canyon
Trail Canyon
Pump Canyon
Picket Canyon
Purgatory Canyon
Cholla Canyon
Ute Canyon
Navajo Canyon
Straight Canyon
Crutz Arroyo
Foxtail Flats Wash
Narrows
Fourmile West Fork Fourmile Wash
VERDE OIL FIELD

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

PURGATORY CANYON (OVERSIZED), COLORADO
7.5 MINUTE SERIES
SHEET NUMBER 21 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

UNITED STATES
DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

UTE MOUNTAIN AREA,COLORADO & NEW MEXICO
CHIMNEY ROCK QUADRANGLE
SHEET NUMBER 22 OF 24

108°37′30″ 108°35′00″ 108°32′30″ 108°30′00″

36°52′30″ 36°50′00″ 36°47′30″ 36°45′00″

Joins sheet 19, Palmer Mesa

Joins sheet 20, Heifer Point

Joins sheet 23, Waterflow

T. 31 N.
T. 30 N.

UTE MOUNTAIN 102 INDIAN RESERVATION

Arroyo
Nest
Eagle

34 100 34 34 51 3 3 3 51 43 103 34 102

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

CHIMNEY ROCK, NEW MEXICO
7.5 MINUTE SERIES
SHEET NUMBER 22 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

108° 30′ 00″ | 108° 27′ 30″ | Joins sheet 20, Heifer Point | 108° 25′ 00″ | 108° 22′ 30″

36° 52′ 30″

T. 31 N.
T. 30 N.

36° 50′ 00″

36° 47′ 30″

36° 45′ 00″

Joins sheet 22, Chimney Rock

Joins sheet 24, Youngs Lake

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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

WATERFLOW, NEW MEXICO
7.5 MINUTE SERIES
SHEET NUMBER 23 OF 24

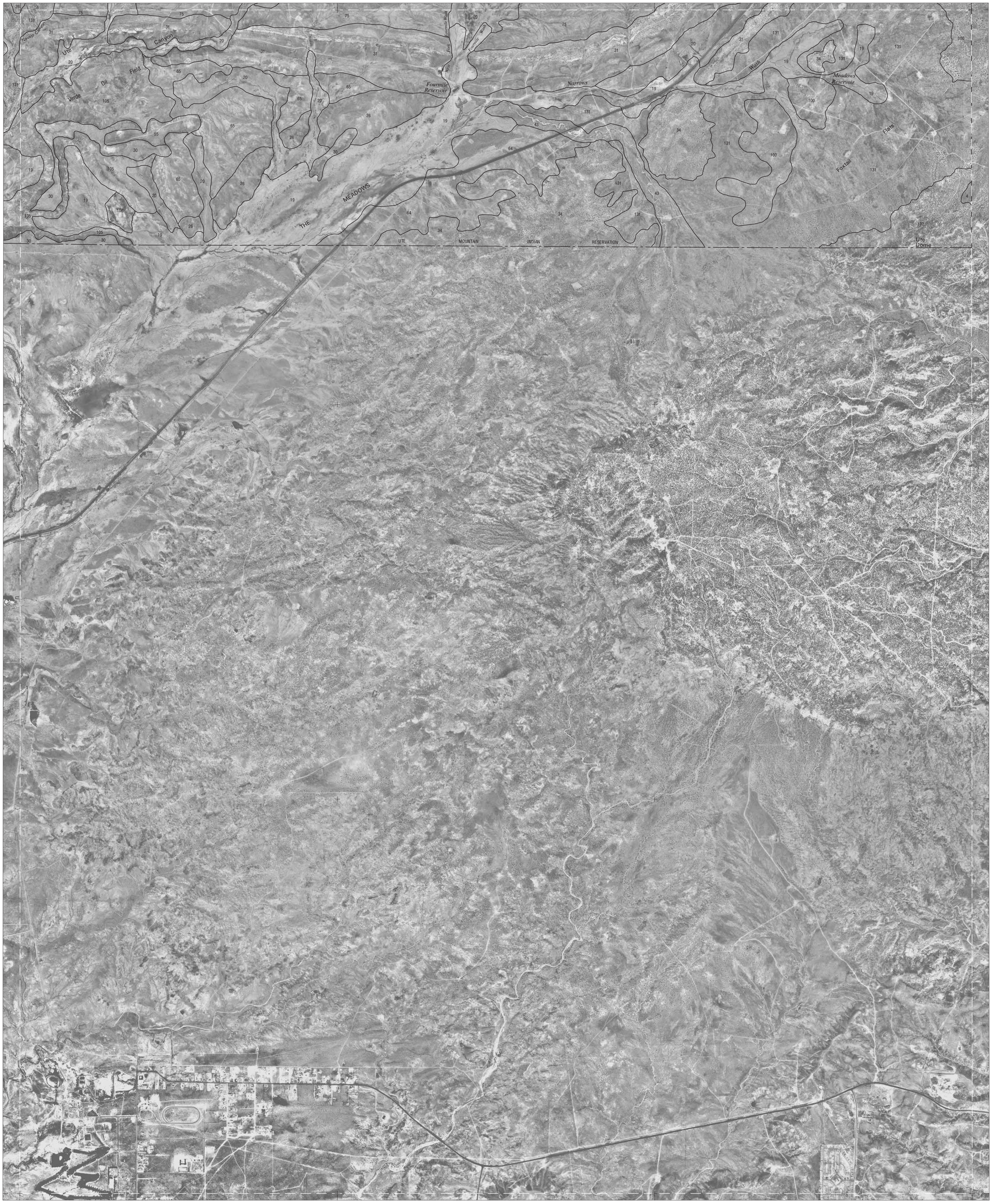
Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.

108°22′30″ 108°20′00″ 108°17′30″ 108°15′00″

Joins sheet 21, Purgatory Canyon

36°52′30″ 36°50′00″ 36°47′30″ 36°45′00″

Joins sheet 23, Waterflow



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies.Base maps are orthophotographs prepared by the U.S.Department of Interior, Geological Survey, from 1991-1997 aerial photography. Hydrography, culture, and public land survey system (PLSS) information were acquired from U.S. Geological Survey.

North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 12. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH

QUADRANGLE LOCATION

SCALE 1:24000

1 0 1
MILES

1000 0 1000 2000 3000 4000 5000 6000 7000
FEET

1 0 1
KILOMETERS

YOUNGS LAKE, NEW MEXICO
7.5 MINUTE SERIES
SHEET NUMBER 24 OF 24

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.